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Perspectives and Issues**



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Marital Adjustment and Quality of Life of Spouses of Alcoholics in Relation to their Socio-Economic Status

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Abstract

Alcoholism is now concerned as a major public health problem all over the world. But the magnitude of alcoholism problem in our country is significant as given that India is the second largest in terms of population in the world and with around 33 per cent of the population is consuming alcohol. The alcohol consumption directly or indirectly impact the health related quality of life, marital quality of life and economical quality of life. The health related quality of life in relation to their marital quality of life of alcoholics from different socio-economic status is very negligible concern specifically in developing and under developing societies. Therefore the present study aimed to see the relationship between Marital Adjustment and Quality of Life of spouses of alcoholics in respect to their socio-economic status. A total of (N= 90) spouses of alcoholics from three different socio-economic status (High Middle and Low) have participated in the present study. The data were collected using World Health Organization (WHO) Quality of Life Scale by Nejat et al. (2006) and Marital Adjustment Inventory by Harmohan Singh (1972). The result of the present study revealed a negative correlation between of health related quality of life with marital adjustment and marital satisfaction among participants from lower and middle socio-economic status whereas it indicates a positive relationship of participants belonging to higher socioeconomic status. From the present study it can be concluded that irrespective of socio-economic status, alcohol consumption has a negative relationship with health related quality of life, marital quality of life and overall quality of life. Program and interventions can be suggested by different agencies for the well-being of alcoholics.

Keywords: Marital Adjustment, Marital satisfaction, Quality of life, Spouses, Alcoholics

Introduction: The degrees of the problem of alcohol dependence in India can be gauged by the fact that 33 per cent of its population consumes alcohol and it is increasing day by day^{1,2}. The negative effects of alcohol consumption may not only lead to chronic and acute health problems, it also associated with other consequences- social, mental and emotional consequences³. These are reflected, for example, as absenteeism or abuse in workplaces⁴ and in day to day family relationships^{5,6}. The family relationship specifically, spousal relationship are affected by the consumption of alcohol. A lot of research studies^{7,8} have demonstrated a strong relationship between male-perpetrated intimate partner violence which may be physical, verbal and sexual and alcohol problems⁹. Holtzworth-Munroe and others¹⁰ affirmed that even martially violent men are significantly lesser psychopathic and antisocial than a wide variety of comparison groups to abuse alcohol. The cumulative effect of consumption of alcohol is marital maladjustment and life dissatisfaction^{11,12} which in turn, leads to high rates of psychiatric morbidity^{13,14,15} especially mood and anxiety disorders in the spouse.

Alcohol consumption not only affects the person primarily consuming it, but also impacts the spouse of the alcoholics¹⁶ and this leads to disturbance in the marital relationship and life satisfaction.^{17,18} This aroused disturbance further impacts their capacity to care and get their partner treated^{19,20}. This situation becomes more problematic when the couple have children also.²¹ In this case, often, the spouse of the alcoholics have to bear sole responsibility of their children and may also develop the feelings of hatred, self-indulgence, escaping social links, may suffer exhaustion and become physically or mentally ill.

Having financial difficulties is another issue that families of Individual with Alcohol Dependence Syndrome (ADS) have to deal with²². Heavy drinking may lead to unemployment²³ and due to the increased financial

cost attached with alcohol purchase leaves the other family members destitute and seriously impairs the couple's marital adjustment and life satisfaction. Hence understanding and addressing the issues of marital and life satisfaction of spouses of alcoholics will not only decrease their burden, improve their coping skills and overall quality-of-life, but is also likely to have a bearing on the treatment and outcome of alcoholics²⁴. According to MefiShenn²⁵, couples who equalize in their original education and conventionalize employment status also enjoy higher marital stability. In this context, it can be said that, there is paucity in studies conducted especially in Indian subcontinent to see the marital relationship and quality of life of the spouses of alcoholic in respect to their socioeconomic status. Therefore, the present study was planned to see the marital relationship and quality of life of spouses of alcoholics in relation to their socioeconomic status- High, Middle and low.

Objectives

The present study is conducted with the aims to

- see the relationship between quality of life and marital adjustment in spouse of alcoholic from low income status participants,
- see the relationship between quality of life and marital adjustment in spouse of alcoholic from middle income status participants,
- see the relationship between quality of life and marital adjustment in spouse of alcoholic from high income status participants, and
- find out the difference of quality of life and marital adjustment between low, medium and high-income status spouses of alcoholic married participants.

Hypotheses

- There will be a significant relationship between quality of life and marital adjustment in spouse of alcoholic from low income status participants.
- There will be a significant relationship between quality of life and marital adjustment in spouse of alcoholic from middle income status participants.
- There will be a significant relationship between quality of life and marital adjustment in spouse of alcoholic from high income status participants.
- There will be a significant difference of quality of life and marital adjustment between low, medium and high-income status spouses of alcoholic married participants.

Methodology

Sample: A total of (N=90) spouses of alcoholics, specifically female participants have participated in the present study. Out of total participants, (n1=30) were spouses of alcoholics from the low-income status group; (n2=30) were spouses of alcoholics from the middle income status group and (n3=30) spouses of alcoholics from high income status group have included in the present study. The spouses of alcoholic participants were selected from the population, whose partners have been consuming alcohol on frequent/daily basis. The income groups were considered according to the government India and World Bank criteria. The age of the participants was random in nature. All the participants were female, as in India, consumption of alcohol is primarily related to the male and for female it is a taboo/stigma. In other words, very few and/or rare female in Indian context consume alcohol frequently or daily basis. All the participants were randomly selected from different regions of Delhi NCR, India. It is important to note that,

the study was conducted on adult and youth population according to the criterion of Government of Youth affairs, where minor or child marriage cases were not included in the present study. Hetro-genital marital relationship was only considered for the present study where homogenital marital relationship and marital relationship with any transgender or others were excluded during the selection of participants in the present study. For the collection of sample, a purposive random sampling technique was followed where spouses of alcoholics who were consuming alcohol on frequently/or daily basis were selected for the present study. The research design of the present study followed both the Correlational and experimental research design, where the level of income of the spouses of alcoholics was the independent variable and the Quality of life and Marital adjustment were the dependent variables

Materials

World Health Organization (WHO) Quality of Life Scale: In order to gauge the quality of life, WHO Quality of Life Scale by Nejat, Montazeri, Holakouie Naieni, Mohammad, & Majdzadeh, 2006 was used. It is a 26-item standardized scale which measures four domains: physical health (7 items), psychological health (6 items), social relationships (3 items), and environmental health (8 items); it also contains QOL and general health items.

Marital Adjustment Inventory: In order to measure the marital adjustment, Marital Adjustment Inventory developed by Harmohan Singh (1972) was used. It asses the level of adjustment among subjects and consists of two forms. Form A for husbands and Form B for wives. Each form consists of 10 questions. The reliability coefficient was found to be 0.94. The validity of the items was obtained by selection items in term of a degree to which they differentiate between the lower and upper 15 per cent of the persons in the distribution of scores.

Procedure: The data for the present study was collected from the home or workplace setting of the spouse of the alcoholics. The participation of the spouses was voluntary. After rapport formation, the instructions were given to the participant from the manual of the respective tools-Manual of World Health Organization Quality of Life Scale (WHOQOL) and Manual of Marital adjustment Inventory used in the present study for the purpose of data collection and requested them to give the information honestly. For any confusion to any item they may ask the researcher for better understanding of the meaning and purpose of the items. At first the World Health Organization Quality of Life Scale (WHOQOL) with a rest interval of 10 minutes the researcher provided the marital adjustment Inventory questionnaire for the collection of information from each and every participant. The entire data was collected individually from each participant participated in the present study. The procedure for collection of information was same for all the three groups of participants. Before the collection of data for the present study, the researcher took consent from each participant and also assured that their personal information and the data related to this research work will be kept confidential

Scoring and Data Analysis: After collection of information related to World Health Organization Quality of Life Scale (WHOQOL), Marital adjustment Inventory, and the personal information, used Pearson's Product movement correlation to find out the relationship between World Health Organization Quality of Life Scale (WHOQOL) and Marital Adjustment Inventory of the participants. Besides that for the comparison of information related to World Health Organization Quality of Life Scale (WHOQOL) and Marital Adjustment Scale of the spouses of alcoholic from different income groups, the researcher used One way Analysis of Variance (One Way ANOVA). The entire data was analyzed using IBM-SPSS 22.0.

Results and Discussion: The Mean Age of the Spouses of Alcoholic Participants from Low Socio-Economic Status (SES) participated in the present study is 35.40±4.90 ranging from 27 years to 42 years. The Mean Age of the spouse of Alcoholic Participants from Moderate Socio-Economic Status (SES) participated in the present study is 40.30±5.46 ranging from 32 years to 48 years. The Mean Age of the spouse of Alcoholic Participants from High Socio-Economic Status (SES) participated in the present study is 41.00±4.62 ranging from 34 years to 47 years. In this context, it can be said that, participants belong to low socio-economic status start consumption of alcohol at an early age than to the middle and high socio-economic status counterparts. In this context, Assunta ²⁶has discussed in study that alcohol is one of the main factor in increasing poverty. As a rural laborer spends around US\$ 80 on alcohol which he earns in a month. Consumption of alcohol or abuse of alcohol basically ruins the families and even breakdown the basic social fabric of society. In this often it is women who bear or face the problems such as disputes at home, deprived and abused children, chronically ill husbands and in most cases gets at end non-working husbands who become burden to the family and to the society as well. In addition to this, the loss in income and when drinker gets ill it causes burden on family members which gets worsened.

Table 1
Inter-correlation between the variables of Quality of Life and Marital Adjustment of Spouse of Alcoholics from Lower, Moderate and High Socio-Economic Status

Variables	Marital Adjustment (Lower Socio-Economic Status)	Marital Adjustment (Moderate Socio-Economic Status)	Marital Adjustment (High Socio Economic Status)
Physical QOL	-.289	-.503*	-.257
Psychological QOL	-.241	-.328*	.372*
Social Relationship QOL	-.287	-.150	.839**
Environmental QOL	-.562**	-.278	.804**
Overall QOL	-.453*	-.696**	-.288
General Health QOL	-.402*	-.236	-.015
Total QOL	-.458*	-.412*	.683**

The inter-correlation between the domains of Physical QoL and Marital Adjustment of spouse of alcoholics from Lower Socio-Economic Status is ($r = -0.289$); between the domains of Psychological QoL and Marital Adjustment of spouse of alcoholics from Lower Socio-Economic Status is ($r = -0.241$); between the domains of Social Relationship QoL and Marital Adjustment of spouse of alcoholics from Lower Socio-Economic Status is ($r = -0.287$); between the domains of Environmental QoL and Marital Adjustment of spouse of alcoholics from Lower Socio-Economic Status is ($r = -0.562^{**}$); between the domains of Overall QoL and Marital Adjustment of spouse of alcoholics from Lower Socio-Economic Status is ($r = -0.453^{*}$); between the domains of General Health QoL and Marital Adjustment of spouse of alcoholics from Lower Socio-Economic Status is ($r = -0.402^{*}$); between the domains of Total QoL and Marital Adjustment of spouse of alcoholics from Lower Socio-Economic Status is ($r = -0.458^{*}$). The score indicates individuals belong to lower Socio-Economic status shows low quality of life and marital life. Hence they need to adopt measures to improve their overall marital and quality of life, but due to the low income and daily needs of life makes it hard-hitting for them to bounce back to good life. The study of Choi, and Marks²⁷ also observed a negative relationship between health-related quality of life and marital quality of life of in relation to socio-economic status. On the other hand Livingston¹⁶ affirmed that there is no impact of health related quality of life of drinkers on their marital quality of life in relation to socio-economic status.

The inter-correlation between the domains of Physical QoL and Marital Adjustment of spouse of alcoholics from Moderate Socio-Economic Status is ($r = -0.503^*$); between the domains of Psychological QoL and Marital Adjustment of spouse of alcoholics from Moderate Socio-Economic Status is ($r = -0.328^*$); between the domains of Social Relationship QoL and Marital Adjustment of spouse of alcoholics from Moderate Socio-Economic Status is ($r = -0.150$); between the domains of Environmental QoL and Marital Adjustment of spouse of alcoholics from Moderate Socio-Economic Status is ($r = -0.278$); between the domains of Overall QoL and Marital Adjustment of spouse of alcoholics from Moderate Socio-Economic Status is ($r = -0.696^{**}$); between the domains of General Health QoL and Marital Adjustment of spouse of alcoholics from Moderate Socio-Economic Status is ($r = -0.236$); between the domains of Total QoL and Marital Adjustment of spouse of alcoholics from Moderate Socio-Economic Status is ($r = -0.412^*$). The scores of Moderate Socio-Economic Status indicates that when psychological, physical and environmental well-being is comprised, spouses are less likely to cope efficiently even though they are educated and further it adversely effects functional and social roles. The study of Choi, and Marks²⁷ also observed a negative relationship between health related quality of life and marital quality of life of in relation to socio-economic status. Further, Livingston¹⁶ affirmed that there is no impact of health related quality of life of drinkers on their marital quality of life in relation to socio-economic status.

The inter-correlation between the domains of Physical QoL and Marital Adjustment of spouse of alcoholics from High Socio-Economic Status is ($r = -0.257$); between the domains of Psychological QoL and Marital Adjustment of spouse of alcoholics from High Socio-Economic Status is ($r = 0.372^*$); followed by the domains of Social Relationship QoL and Marital Adjustment of spouse of alcoholics from High Socio-Economic Status is ($r = 0.839^{**}$); followed by the domains of Environmental QoL and Marital Adjustment of spouse of alcoholics from High Socio-Economic Status is ($r = 0.804^{**}$), followed by the domains of Overall QoL and Marital Adjustment of spouse of alcoholics from High Socio-Economic Status is ($r = -0.288$); followed by the domains of General Health QoL and Marital Adjustment of spouse of alcoholics from High Socio-Economic Status is ($r = -0.015$); followed by the domains of Total QoL and Marital Adjustment of spouse of alcoholics from High Socio-Economic Status is ($r = 0.683^{**}$). The mean score of High Socio-Economic Status shows that being in high status the issues faced by them is not that much different from the middle and low but due to family influence and money helps them to cope up with the stress. The study of Rostami and associates²⁸ confirmed that, marital quality of life is mostly depend on health related quality of life. In other words, there is a positive correlation exist between marital quality of life such as marital adjustment, marital satisfaction with physical, psychological, social and overall quality of life of an individual irrespective of his/her drinking behaviour.

Conclusion

From the result of the present study and reviewing different literature, it is observed that, there is a significant relationship exist between health related quality of life and marital adjustment and marital satisfaction with participants belonging to higher socio-economic status irrespective of alcohol consumption behavior. But the result of the present study revealed a negative relationship between marital quality of life and health related quality of life. The reason might be that, the participant (alcoholics) from lower and middle socio-economic status are not so concerned about the health related quality of life and its impact on marital relationship. From the present study, it can be concluded that, the consumption of alcohol, definitely affect the physical, social, and psychological health and it also affects the marital quality of life regardless of any income group. Therefore, the health management programme in relation to marital quality should be provided to the people to minimize the alcohol consumption. Programs and interventions should be initiated by different organisation such as, government, private, NGOs to help alcohol consumer

and their families for their healthy social, economical, psychological, physical and overall health related management.

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Cross-Sectional Study on Challenges of COVID-19 Vaccination: Situational Analysis in a Rural Community of Gujarat

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Abstract

Vaccination hesitancy has been one of the ten biggest global health threats, even before the emergence of COVID 19. Present study aims to document a composite picture in context of corona vaccination during current pandemic in a typical rural community. The objectives of the current study are to document the vaccine hesitancy at Rural Community, the profile of COVID-19 vaccine beneficiaries at a vaccination centre and measure the frequency of vaccinated health staff at and reasons for COVID-19 vaccine hesitancy and the challenges they face. It was a cross-sectional study and data was collected during May 2021 on a semi structured questionnaire. Sample size was 96 (round off 100) for each at vaccination facility and a community-based survey. Consecutive sampling was adopted till the desired sample was achieved. Health staff at facility was also covered to know vaccine coverage and their perspectives. It was found that Vaccine Hesitancy in the community was 81 per cent including 12 per cent still unclear whether to take vaccine or not. Reason for vaccine hesitancy included religious beliefs, fear of adverse events, not a priority, for female accessibility issues and myths about COVID vaccine and pre-registration hurdles. Only 19 per cent showed willingness to take vaccine. Source of information about COVID-19 vaccine was health staff and relatives/friends in 70 and 80 per cent for center and community based respectively. While the vaccination coverage for health staff was almost complete, it was only was 17 per cent (one dose) Technical errors also impose problem in on online registration portal. Vaccine hesitancy was there in some sections of community mainly due to misconceptions which need to be addressed by government and local NGOs together.

Key words: COVID 19 Vaccine Hesitancy, Community Health Centre, Rural Community

Introduction

The corona pandemic especially its second wave in particular was catastrophic¹ and swords of third, fourth or fifth waves continue to hang over our heads. We as Indian are at more risk due to poor adoption of COVID appropriate behaviour along with poor living conditions (crowded living space and hygienic inaccessibility of water/ sanitation facilities) and lack of social distancing measures. It seems futile and practically impossible now to contain subsequent waves of COVID-19 with lockdown/ curfew as it disproportionately affects those who work in informal sector and rely on daily wages as happened earlier when it was imposed. Containing the virus now calls for not lockdown but a combination of enforcement of COVID appropriate behaviour and intense vaccination drive at a much larger scale. Longevity of COVID appropriate behaviour is limited and a one third of uninfected and unvaccinated people in India may create a set of condition for the new variant to emergence². Delta new variant with high transmissibility and more virulence contributed to majority clinical cases as post vaccination infection, very few cases needed hospitalization (9.8%) with a fatality of 0.4 per cent. It underlines the importance of vaccination and COVID appropriate behaviour by not allowing the transmission and emergence of new variant³. From 16 January 2021, vaccination programme against COVID started. It was initially sub-divided in three phases namely- (a) first phase targeted all health workers (estimated 1 crore), (b) second phase frontline like govt staff like sanitation workers, police, govt workers, (estimated 2 crores) and (c) all around India. In the third phase, it was for the people aged 60 years and above and those between 50–60 years with severe co morbidities (estimated 27 crores) and subsequently above 45 years and finally the adults from 18-45 years were targeted. In India, misguided hesitancy and fake information about vaccine are substantial threat to the

elimination of the pandemic and achieving the herd immunity. ⁴Vaccine hesitancy even among health workers manifested initially as lukewarm response towards vaccination; possible factors were lack of efficacy data for COVAXIN (its third phase clinical trial were going on and no data was available) and a widely held belief that normally vaccine development in the past took minimum 5-7 years and this vaccine developed in less than one year (suspicion of compromised quality and safety)⁵. It may be noted that it has been more than six months since vaccination was introduced, still in the India till date only 456 million doses have been administered resulting a coverage of 26.7 per cent of the population including 7.5 per cent of the population having received both the doses. Performance of Gujarat is better than national average. A total 32.6 million doses have been administered covering 36.6 per cent of the population including 11.4 per cent people having received both the doses (Table 1).

Table 1
Vaccination status (%) for India and Gujarat (30 July 2021)

S No	Vaccination Status (%)	India	Gujarat
1	Those who have received one dose (%)	19.2	25.2
2	Those who have received both dose (%)	7.5	11.4
3	Total (%)	26.7	36.6
4	Total doses administered (in millions)	456	32.6

Source: www.worldometers.info/coronavirus⁶

Objectives

When this study was planned, first phase of vaccination for health workers was over and second as well as third phase (people > 45 years) were included for the vaccination. Vaccination for 18 - 45 years was yet to start in the study area (it has started now). In view of this, population > 18 years was included in the study (not eligible for vaccination at that time) to evaluate their potential vaccination hesitancy. Those above 45 years were studied for their actual vaccination status and the possible hesitancy. The study was planned with the objectives to (a) document the vaccine hesitancy of rural community through a field based survey (b) profile of COVID19 vaccine beneficiaries at a vaccination facility or Community Health Centre (CHC) and (c) to assess the vaccination status of health staff with reasons for COVID-19 vaccine hesitancy and challenges they face.

Methodology

Study aimed to draw a complete picture of vaccination status, vaccine hesitancy and perspective of providers, therefore it had several components. A cross sectional community-based study was planned (to know the vaccine hesitancy) and so also a study of vaccine recipients at a CHC (to know the profile of vaccine recipients). At that time, no study from this region was available so to calculate and maximize the sample size, probability for those who are aware of vaccine and are willing to take vaccine (p) was taken as 50% for both at CHC based and community-based components respectively. Sample size was calculated as per $N = V^2PQ / L^2$, with L (relative precision of P) as 20 per cent and V as 95 per cent confidence level. Sample size came as 96.04 which was rounded off to 100. For Community survey, a locality (village) was randomly selected from the list available at CHC. Sampling technique for both components was consecutive sampling till the 100-sample size was achieved. Study population at vaccination centre comprised of all adults ≥ 45 years, who have come for 1st or 2nd dose of vaccine at CHC, Thol, located in the district Mehsana, during May 2021 (study period), whereas in community-based study, study population comprised of all adult (≥ 18 years). Those who were unwilling, were excluded in both the components.

Study tool for both the components was semi structured questionnaire. Interaction with health staff at vaccination facility was of informal type to know their vaccination status, reason for vaccine hesitancy (if any) and the challenges they faced. Data was entered in MS Excel and frequency and proportions were calculated. Written permission was taken from state authorities before study initiation, Participant information sheet (PIS) along with the consent form in Gujarati language were used. Prior consent was taken before interviewing subjects assuring full confidentiality and removing all identifiers.

Findings

Table 2 presents the profile of study subjects in terms of age, gender education and occupation for both community-based and center-based components. As mentioned earlier, community based included all > 18 years adults while the center based included only those above 45 years. Comparing the two columns, the females, those between 45 - 60 years of age, literates (especially educated "secondary & above) and those in service/ retired from service were more likely to receive the vaccines.

Table 2
Socio Demographic Profile of Beneficiaries in the Community and at Vaccination Centre

Socio demographic features	Community-based N=100)	Vaccination Centre (N=100)	In vaccine acceptance
Gender			
Male	62	56	Females were represented more
Female	38	44	
Age			
18-45	68	NA	45-60 years were represented more
45-60	15	61	
>60	17	39	
Mean ± SD (years)	37.6 ± 17.2	58.5 ± 10.6	
Education status			
Illiterate	37	18	Literate esp. those educated secondary and above were represented more
Primary	35	29	
Secondary & above	28	53	
Occupation			
Semi/ Un/ skilled	40	22	Homemakers and those in service/retired were represented more
Homemaker	35	40	
Business	11	08	
Service	03	10	
Retired	11	20	

Vaccine hesitancy refers to delay in acceptance/ refusal of vaccines despite its availability. It is context specific, varies across time, place and vaccines and is usually influenced by factors like complacency, lack of convenience/ confidence. ⁷Community-based surveys are ideal to find out the vaccine hesitancy. In present study in the community, vaccine hesitancy was 81 per cent including 12 per cent still confused whether to take vaccine or not. Only 19 per cent showed clear willingness to take vaccine and it included all from 18 – 45 years (not eligible till the time of survey). Pre-online registration (for vaccination), a proxy indicator validates the above findings as only in 13 per cent had such registration and rest did not.

While profiling the vaccine recipients, it was found that 70 per cent came for 2nd and 30 per cent for 1st dose. When asked, 96 per cent of them was aware of the necessity of vaccine, also 98 per cent waited for

stipulated period of 30 minutes for observation. All vaccine recipients rated this program as good to very good. A total 81 per cent accessed directly/ walked-in without any registration, while the rest did online registration. Source of information or motivation in both the populations were family members/ friends and health staff (mainly ASHA& health workers) which together accounted for 80 per cent and 71 per cent of subjects in community and centre-based components (Table 3)

Table 3
Source of Information among Beneficiaries at Centre and in Community
(Single Most Important Response)

Source of information	Community N (100)	Centre N (100)
Health staff	22	38
Friends and Family member	58	33
Television	09	18
Social media	05	01
Newspaper	06	07
Mandatory (govt job)	0	03

As per the history given by the recipients, 19 per cent had experienced COVID-19 infections in the past and 42 per cent had some co -morbidity; common being hypertension, diabetes, Tuberculosis, Obesity, etc.

CHC Thol (Vaccine facility) had a total staff of 33 persons. Except for 3 staff nurses who were breastfeeding their babies, all of them had received both doses of vaccine. Challenges faced by the health staff include shortage of manpower as per Indian public health standards, inadequate supply of vaccine doses and vaccine hesitancy at community level. Vaccine wastage factor was calculated based on the total of 790 doses received and 714 doses actually administered which was 9.6 per cent.

According to the health staff, there is a lack of understandings about COVID-19 pandemic and its vaccine at the community level. Technical errors coupled with illiteracy; poor data connectivity create problem in operating co-win App for registration. Misconceptions and myths about COVID-19 vaccine, like it may cause infertility, fear of death/ adverse reaction after vaccination, cultural/ religious barriers at community level were reported by health staff. Inadequate vaccine dosages against the high demand of vaccine were also reported more so after the surge of cases during 2nd wave.

Discussion

Even after more than six months of the start of vaccination, only 7.5 per cent of the population has been fully vaccinated. Current rate of vaccination is around 4 million doses per day⁶. However, to achieve the herd immunity, 70 per cent vaccination is to be achieved and this will require close to 2 billion doses against 456 million doses administered so far. Much of the public discussion regarding the slow pace of vaccination is centered around supply-side barriers like shortage of vaccines, lack of infrastructure, logistics and equitable access to vaccine; and vaccine hesitancy. These issues may be more prominent in the rural population with the fact that people from the lower income strata may experience higher morbidity and mortality from the COVID-19 pandemic due to their poor health⁸, (<https://www.ons.gov.uk/people>). Literature on COVID-19 vaccination status is abound. Mass vaccination is the most effective tool to fight this pandemic. Countries like Israel, UK, US attained high vaccination coverage (> 50%) showed rapid decline in cases (serious ones) and related mortality and deaths⁹.

Vaccine delivery has three parts namely (1) recipient of the jab, (2) system of trained manpower; infra structure to administer vaccine and (3) availability of the vaccine with the needle and syringe. Accordingly present study focussed on all these three components to get a overall picture. Vaccine Hesitancy in this study was 81% including 12% unsure whetherto take it or not. Rest (19%) were willing. Those who were more educated or in service or retired were willing to take vaccine probably were well informed and had access to IEC done by governmental agencies. Reasons for vaccine hesitancy were multiple such as

- I don't have any problem, why to take a vaccine (Complacency).
- We are confined at home and don't go outside. So, vaccine should be given to youngsters who go out. Moreover, I had hardly any time to attend vaccination as I was engaged in domestic work (females),
- We have heard that who took vaccine, had serious side effects and few have died (unconfirmed sources) (Fear of side effects).
- My relative took a vaccine, still got infected by COVID (Efficacy)

Despite this, female participation was good in this study. Source of information was reflective of hard efforts by the health staff in motivating the people especially the ASHA and other field staff. For rural community field workers are more reliable than mass/ social media. This was the probable reason that >80 per cent of them came without any prior registration. Co-win app and accessibility to digital certificate deserve special praise which at times, even many advanced countries don't have⁴. However, at the same times illiteracy at community in general and rural in particular faces hurdles in operating co-win App. Therefore, Pre-registration on the app must not be compulsory precondition for vaccination. Vaccination awareness program in Thol village was successful as 96 per cent could tell the name of the vaccine including its possible side effects or adverse event. It was heartening to know that 70 per cent of recipients came for the 2nd dose. It shows that people are satisfied with system (repeat visit) and are aware about the need of 2nd dose. Also, 98% of them cooperated for waiting period of 30 minutes. All of them rated program as good to very good. There are two positive determinants of community acceptance of potential future vaccines individuals' perceptions of high risk and age⁹. Based on history, only 19 per cent had COVID infection and therefore > 80 per cent were vulnerable otherwise also 42 per cent of them had one or more co morbidities.

Vaccine hesitancy amongst health staff is damaging to program and send wrong signals to the community as they are seen as role models. Except for 3 female staff breastfeeding their babies, everyone had taken both doses of vaccine. Some little hesitancy among health staff was their initially, disappeared after seeing the catastrophic damages during the 2nd wave and facilitated the mobilization of community. These 3 staff also have taken vaccination now after the clear guidelines from Gol. Health staff could meet the challenges of vaccination despite limited staff(less than IPHS standards) may be because of lockdown and less non covid work. But sustaining this in future when routine activities may be in full swing, it may pose a challenge. Any vaccine shortage in future may break this connect with people

Exposure to fake news on social media has increased the anxiety and risk perception in society with insufficient information and uncertainty¹⁰⁻¹². Reasons for vaccine hesitancy given by health staff included difficulties in operating the portal for the registration which depends on low Smartphone penetration/ internet access and low digital literacylikely to be more in rural areas. Reasons for slow roll out were mainly the capacity constraint and policy confusion (inoculation opened to all adults from 1st May amid vaccine shortage & frequent changes in the time interval between 2 doses) as a result there was decrease in vaccination points due to lack of supply. Third essential thing was vaccine. Vaccine shortage was a pan Indian problem and was primary constraint. As per GOI guidelines, Wastage Factor (WF) is (1- doses

administered/ doses received) *100 (assuming maximum programmatic wastage of 10%). Vaccine wastage at various levels (transportation, storage & actual vaccination) needs to be identified and curbed. The COVID-19 vaccines are supplied in 10 doses vials, so if only 1-2 beneficiaries arrive at given time slot either they have to wait till another 7-8 people come or they have to go back. Present study had wastage of 9.6 per cent.

Conclusion and Recommendations

Vaccine Hesitancy was high; reasons for same must be identified and addressed locally. Apart from health staff, Local leaders, *Mahila Mandal*, students and those vaccinated everyone must be roped in to publicize vaccination. Only few could download the app so the direct walk-in option must be kept open in rural areas. In fact, at a later stage for those left out, house to house approach may also be tried. All this have to be done in a time bound manner so the critical coverage needed for the herd immunity can be achieved

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Effectiveness of Health Promotion Programme: An Interventional Study on Knowledge Attitude and Practices Regarding Menstruation among Adolescent Girls

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Abstract

Adolescence is a transition period with onset of menstruation in girls. Although a natural phenomenon, the substantial lacuna of knowledge regarding the process links it with unhygienic practices and several misconceptions. Lacking a platform to share or gain right information, girls often suffer from discomfort, infections due to unhygienic practices, embarrassment and low self-esteem which further leads to poor academic performance and increased absenteeism. Addressing the issue at right age would increase knowledge and lower inhibitions, escalate safe hygienic practices and prevent RTIs. With this context, it would be appropriate to give educational intervention to girls at school level itself. The present study was undertaken to assess the effectiveness of Health Promotion program on knowledge, attitudes and practices regarding menstrual hygiene among adolescent girls studying in 8th -11th std. in Gurgaon district of Haryana. A mix method intervention study was conducted on a sample size of 150 adolescent girls selected from Govt schools of Gurgaon district. A Pre-tested, Semi structured Questionnaire was used for pre and post-test. Two Intervention sessions including Focused group discussion followed by visual presentation and health education on the topic, were conducted at the interval of One month. Post –Test was conducted after a break of one month.

The study revealed that 62 per cent of the girls had prior knowledge of menarche with mother as the main source of information. Only 18 per cent of girls had adequate knowledge and awareness about the menstruation, 77 per cent considered it as unclean, 98 per cent girls use code words to hide it from others Absenteeism due to mensuration was reported in 96 per cent of girls, 41 per cent feel lack of confidence and 33 per cent were afraid of staining. 100 per cent girls had restrictions / taboos with 92 per cent face restricted entry to religious places, 54 per cent face food restrictions, 25 per cent sports restrictions, 22 per cent were restricted to go outside or attend school. After the health promotion program, there has been a significant improvement in Adequate knowledge (80% vs. 18%), Absenteeism reduced to 33 per cent, frequency of changing pads increased to 83 per cent, 41 per cent of the girls abandoned taboos /restrictions related to menstruation. Knowledge, Awareness and attitude regarding menstrual hygiene practices of the participants show a significant improvement and a positive correlation with P-VALUE 0.01<0.05. The study has highlighted that intervention in the form of Health Promotion program can significantly improve knowledge, awareness and attitude regarding Menstrual Hygiene practices among adolescent girls as well as boost their self-esteem and could play a pivotal role in holistic growth and empowerment.

Key words: Adolescent Girls, Menstrual hygiene, Health Promotion, Knowledge, Preparedness.

For a girl, adolescence is a period of rapid transition to womanhood with the onset of menstruation. Though it's a physiological process still it is linked with several misconceptions and malpractices which may result in adverse health outcomes. Often, parents themselves do not know how to handle the physical and emotional development of their adolescent girls, particularly menstruation. Menstrual disorders are found to be the commonest gynecological problem in teenagers, affecting their future reproductive health if ignored. Poor menstrual hygiene and inadequate self-care are major determinants of morbidity and other complications among this age group. Some of these problems include urinary tract infections (UTI), scabies in the vaginal area, abnormal abdominal pain, absence from school, and complications during pregnancy^{1,2}.

There is a substantial lacuna in terms of knowledge, skills, and attitudes for managing the menstrual cycle among adolescent girls. In India, a culture of silence surrounds the topic of menstruation and related issue is interwoven into a set of traditions, myths and misconceptions. The social practices about menstruation make a girl child feel subnormal and may hamper her self-esteem development. Several studies have reported restrictions in daily activities such as, not being allowed to take bath, change clothes, comb hair

and enter holy places³⁻⁵. Apart from these, dietary restrictions during the menstrual period are also imposed. Social prohibitions and negative attitude of parents as well as school teachers in discussing the related issues has openly blocked the access of adolescent girls to right kind of information. It is worthwhile to mention that poor menstrual hygiene comes in the way of achieving the Millennium Development Goals (MDG) 2,3,5,7 and 8 for public health⁶ and In response to the global goals SDGs, UNICEF has developed a new Strategy for Water, Sanitation and Hygiene (WASH) 2016-2030 under which menstrual hygiene is an important considerations for school-going girls, both for their educational attainment and their health. The gender-unfriendly school culture and infrastructure, and the lack of adequate menstrual protection alternatives such as clean, safe and private sanitation facilities⁷ undermine the right of privacy, which results in a fundamental infringement of the adolescent girls in India therefore Menstrual hygiene management has been made an integral part of the Swatch Bharat Mission Guidelines (SBM-G)⁸.

Role of health promotion is pivotal in significantly improving knowledge, attitude and practices regarding menstrual hygiene practices among adolescent girls thereby having a long term impact on health indicators. With this context the present study was undertaken to explore the level of knowledge, attitudes, status of hygiene and practices regarding menstruation among adolescent school girls. Furthermore, this study was intended to find out the effects of Health promotion and direct intervention on knowledge and practices related to menstruation among the study population.

Objectives

The study was conducted to assess the effects of health Promotion on knowledge, attitudes and practices regarding menstrual hygiene among adolescent girls studying in VIII - XI classes in Gurgaon district of Haryana with the following specific objectives:

- To assess the knowledge and prevalent practices on menstrual hygiene among adolescent girls
- To determine the correlation between MHP and absenteeism/self-esteem
- To introduce the Intervention method using visual pedagogy, questionnaire.(Pre and Post)
- To study the effectiveness of Health Promotion Program on menstrual hygiene practices.

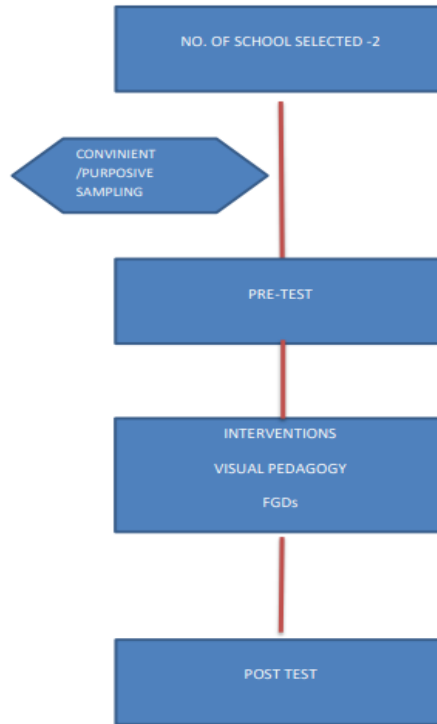
Hypothesis

Adolescent girls studying in VIII - XI standard after structured Health promotion programme.

The present study was conducted among 150 Adolescent girls studying in VIII - XI standard of Govt. Senior Secondary School, Chakkarpur and Govt. Senior Secondary School, Sakhalin of Gurgaon district, Haryana for a duration of three months from Jan 2020 to March 2020. Adolescent girls studying in VIII - XI, between the ages of 13 and 17 years who were willing to participate and were present during the data collection, were included. However, those who were not willing to participate or were not available during the follow up were excluded from the study. Schools were selected using the convenient and purposive sampling method.

Research design including Pre-test-visual pedagogy and-post-test was followed as shown in Figure 1.

Figure 1
Research Design Followed



As a part of health promotion programme, health education was given on the subject with the aim of improving their knowledge and awareness about the menstruation as well as they were told to prepare a pouch for themselves to keep them ready for sudden onset menstruation under all situations . 5 P's of this activity were taught to them which included a Pouch which must contain:

- P- Pad (Sanitary Pad)
- P- Panty (Extra undergarment)
- P-Paper Soap (For hand hygiene)
- P- Paper (For wrapping of used pad / Stained UG)
- P- Paper Bag (For disposal of Pad)

Statistical analysis: Data collected was coded and entered in Microsoft excel sheet and analyzed

Out of 150 participants, baseline data for menarche indicates that 35 per cent of the girls experienced Menarche at the age of 13 years, 27 per cent and 26 per cent of the girls had menarche at 12 and 14 years respectively. It was observed that only 6 per cent of the girls achieved menarche at an early age of 11 years (Figure 2). It was revealed that only 62 per cent of the girls had knowledge before menarche, 38 per cent were clueless. Role of school was seen in 41 per cent of the girls as they received Information through workshops conducted in schools, 5 per cent of the participants were taught during school classes while 54 per cent Classes while 54 per cent girls did not receive any information from school (Figure 3).

Figure 2
Age at Attaining Menarche

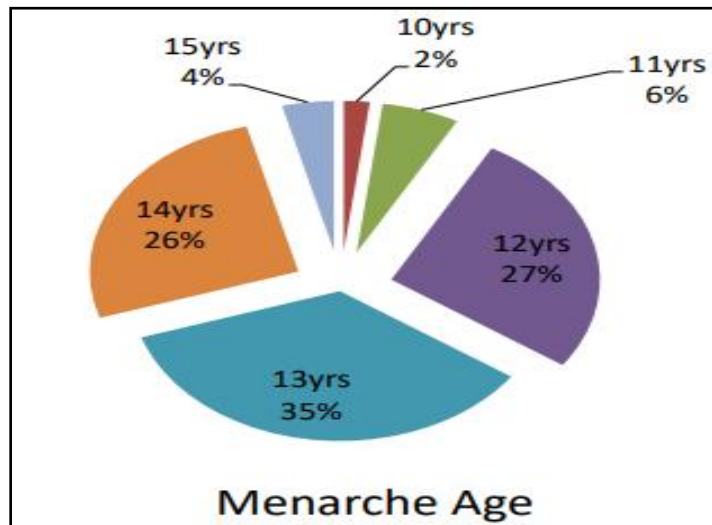
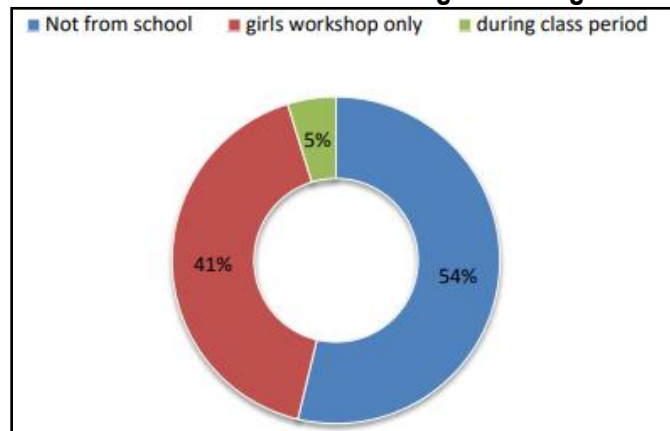


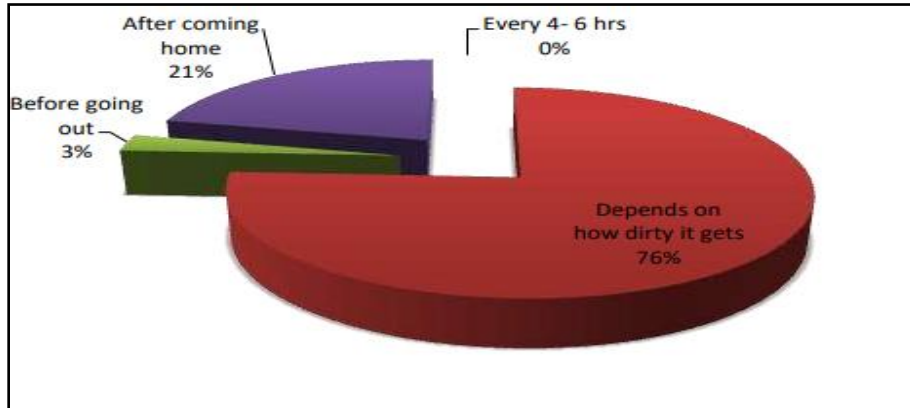
Figure 3
Role of Schools in Providing Knowledge



Only 18 per cent of the girls completely understood the process of menstruation when Informed for the first time while a large percentage was Doubtful with 57 per cent believed it to be "girls thing" and 37 per cent thought of dirty blood coming out of body. 41 per cent feel lack of confidence during menstruation and 44 per cent of girls were uncomfortable due to rashes, 77 per cent of the study population believed menstrual blood as dirty, 72 per cent were not aware of the importance of menstrual tracking and 80 per cent had no knowledge about the menopause 91 per cent of the girls were not aware about the use of medicine during menstrual Cramps, while 74 per cent girls were not aware about the white discharge (Leucorrhoea) and its related problems (fungal infections) and how to deal with it.

None of the girls were aware of the hygienic practices of changing sanitary pads at an Interval of 4-6 hours to avoid bacterial infection. 76 per cent of girls were habitual of changing pads depending on how dirty it gets, whereas 21 per cent practice pad changing only after Returning home from school / out (Figure 4).

**Figure 4
Practicing Hygiene during Menstruation**



**Table 1
Leaves Taken (Absent from Class) by Girl Students during Menarche**

Leaves Taken/Month	% of Girls
Zero Day	4
Half Day	16
One Day	44
Two Days	33
More Than Two Days	3

Menstruation is one of the causes of absenteeism among girl students affecting academic performance. Results show that 44 per cent of girls took at least a day's leave due to various problems during menstruation, 33 per cent took 2 days of leave while 16 per cent opted for a half day during menstruation as shown in Table 1.

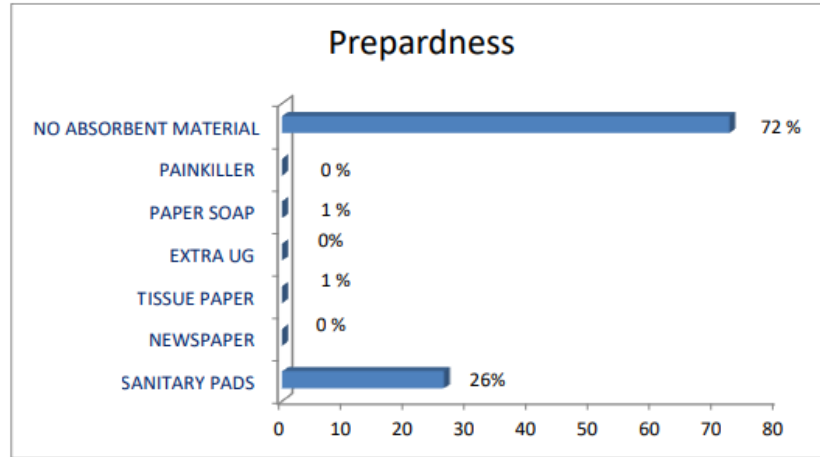
100 per cent of the girls faced restrictions or follow taboos in one or the other form with majority of 92 per cent faced restriction on entering temple, 90 per cent were with majority of 92 per cent faced Restriction on entering temple, 90 per cent were restricted from participating in prayer by their families. 54 per cent girls were restricted to eat food items like cold and sour food, 61 per cent of the girls were told to not touch or water the plants like basil (*Tulsi*), 25 per cent of the girls faced sports restrictions 22 per cent of the girls were not allowed to go outside for activities as well as they were told not to attend school during menstruation, 9 per cent of the girls were restricted to enter kitchen and 3 per cent faced restrictions on bathing as shown in Table 2. Following such taboos not only leads to low self-esteem but also inculcate the feeling of abnormality towards the menstruation.

**Table 2
Percentage of Girls Facing Restrictions during Menstruation**

Restrictions	%
Temple entry	92
Going outside/ school	22
Sports	25
Prayers	90
Kitchen entry	9
Food restrictions	54
Touching plants	61
Bathing	3

In terms of preparedness, it was found that only 26 per cent of the girls carry sanitary pads with them during school hours but 72 per cent of girls were not prepared for their monthly cycle, if it happens during school hours as shown in Figure 5.

Figure 5
DISTRIBUTION BASED ON PREPAREDNESS OF ADOLESCENT GIRLS FOR MENSURATION



Health promotion programme has displayed a significant improvement in the knowledge and practices among adolescent girls as shown in Table 3.

Table 3
Effectiveness of Health Promotion Programme among Adolescent Girls

		Base Line %	Post Intervention %
Knowledge	Understanding Of Menstruation Process	18	80
	Use Of Code Language	98	61
Awareness	Awareness About Menopause	20	100
	Awareness About Medicine Intake	9	81
	Awareness About Menstrual Tracking	28	97
	Awareness About White Discharge	26	96
	Low Self Esteem	41%	2%
Practices		Base Line %	Post Intervention %
	Frequency Of Pad Change Every 4 -6 Hrs.	0	83
	Absenteeism During Menstruation	96	33
	Preparedness	26	99
	Restirctions Followed	100	59

Methods Deployed:

- A. Calculated P value (level of significance) in regression by using Microsoft excel Data Analysis tool. (Fig 6)
- B. Radar graph mapping to show correlation of the variables. (Fig 7)

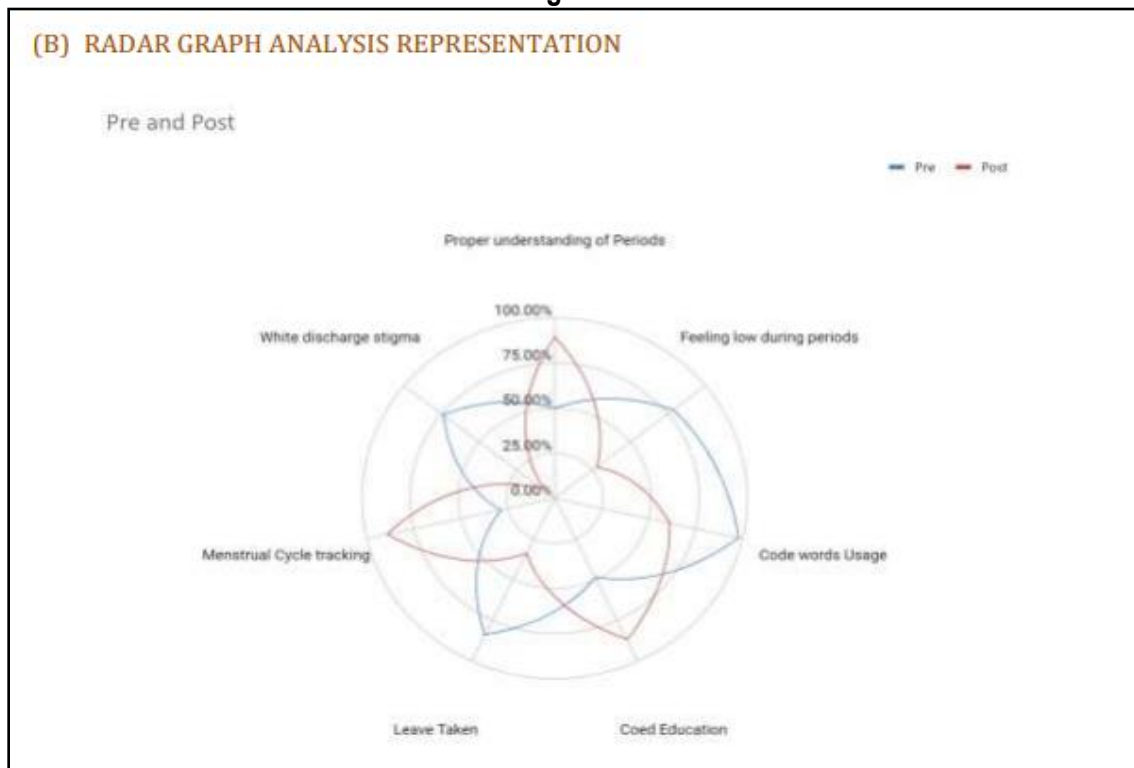
Figure 6

(A) P VALUE ANALYSIS

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.806388596							
R Square	0.650262568							
Adjusted R Square	0.591972996							
Standard Error	28.01538508							
Observations	8							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	8755.704194	8755.704194	11.15572727	0.015611348			
Residual	6	4709.170806	784.861801					
Total	7	13464.875						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	164.622709	36.90696117	4.460478561	0.004280819	74.31462836	254.9307897	74.31462836	254.9307897
POST	-1.591259083	0.476422157	-3.340019052	0.015611348	-2.757022106	-0.425496059	-2.757022106	-0.425496059

Figure 7

(B) RADAR GRAPH ANALYSIS REPRESENTATION



The p – value for the analysis is 0.01, coming out to be $p < 0.05$ and is statistically Significant i.e. $0.01 < 0.05$. The radar graph mapping shows a positive increase in the variables, which in turn represents a positive increase in knowledge, awareness, and attitude of the study population.

This study has highlighted the needs of the adolescents to have accurate and adequate information about menstruation and its appropriate management as well as effectiveness of health promotion program to

achieve the same. Variations in perceptions, attitudes and practices related to menstruation among girls are important findings of the study. As mothers were noted to be the first informant (53%) about menstruation in the present study, it is of utmost importance that the mothers be armed with correct and appropriate information on reproductive health. The focus should be on IEC sessions to mothers of adolescent girls. The school PTM is an ideal forum through which this can be achieved. It was found that 54 % of girls did not receive any information from school regarding menstruation which raises the level of concern as schools should play a proactive part in imparting health education among adolescents. It was seen that 41 per cent of the girls lacked confidence during menstruation which was the main reason of absenteeism from school. Code words were used by 98 per cent of the girls to avoid embarrassment. However, this study revealed a significant improvement in confidence and decrease in absenteeism from 96 to 33 per cent. Code word usage was reduced to 61 per cent. Frequency of changing pads was also increased to 83 per cent. Awareness about Menstrual tracking (28% vs 97%), menopause (20%vs100%), medicine intake (9%vs81%) was increased while white discharge stigma was reduced from 74 per cent to 6 per cent. A positive thing was noticed in the study that 41 per cent of the girls abandoned taboos related to menstruation; and this move was supported by their families which suggests that educated families could break the age old traditions and would have a positive effect on the mental and social health of girls. In terms of preparedness a significant improvement of 99 per cent of the girls carrying absorbent material for sudden onset during school hours was seen. The positive results of this study demonstrate the feasibility of implementing a health education programme on menstrual hygiene at schools especially age group of 13, 14 and 15 years.

Conclusion and Recommendations

From the current study, the authors conclude that a well-informed, continuous school education programme should be delivered to students, particularly to the girls, at an early age itself to impart proper knowledge and awareness as well as preparing them for menstruation. It is important to extend such education to their family members, especially mothers, which could be achieved through PTMs at the school level. Further studies on involving teacher-led education on menstrual hygiene can be done. A curriculum-based approach will be able to address adolescent girls and boys collectively. Such an approach will impart knowledge to the boys too resulting in reducing the embarrassment faced by menstruating girls by creating a healthy school environment. This will also enable the adolescent girls to handle menstruation hygienically and with confidence. Clean toilet facilities, water facilities and facilities to dispose sanitary pads should also be made available at the schools.

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Anxiety Level of Nurses Working in Designated COVID-19 Multi Specialty Private Hospitals in Delhi: A Comparative Study between Peak and Less Corona-virus Cases

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Abstract

The study was undertaken to understand the changing pattern of anxiety level of nurses working in designated Covid-19 hospitals. Two multi-specialty tertiary level private hospitals, designated for treatment of COVID-19 patients were selected purposively. The requisite data were collected at two time periods, one when the Covid-19 cases were less (during last week of December 2020), second time when the COVID-19 cases were quite high (First week of May 2021). The nurse respondents were selected during these two periods. First time 148 respondents were selected and during the second time period the selected respondents constituted 102 numbers. The standardized anxiety measuring scale (GAD-7) prepared by Spitzer et al. (2006) and Coronavirus Anxiety Scale prepared by Lee (2020) were used for data collection. The Chi Square Test was applied to do the statistical analysis. It is observed from the findings that moderate and severe anxiety levels of the respondent is quite high during the period of more Covid-19 cases as compared to the period of less COVID-19 cases.

Key words: Anxiety, Nurses, COVID-19, Coronavirus.

Introduction

At the time of writing this article India just got over with the second wave of COVID-19 pandemic. India reported a staggering more than 400,000 cases on 6th May 2021¹. The surge in the number of cases had put tremendous pressure on the hospitals, mortuaries and crematories. The hospitals had to face severe pressure from outside and within. The number of admissions sought is much higher than the beds available, the medicines were not available, and the scarcity of oxygen in the hospitals and the shortage of staff because the staff also got infected are some of the reasons which increased a lot of pressure on the hospitals². The medical staff suffered stress and anxiety because of these reasons. The researcher was in the process of writing an article on anxiety among the nursing staff during the pandemic based on the data collected in the month of December 2020 when the first wave just got over. During the second wave the researcher found an opportunity to collect the anxiety related data for the nursing staff from the same population and compared how the stress level varied during the peak of the Covid-19 in Delhi (India).

The international public health has been largely impacted in a negative manner due to the COVID-19 pandemic. The corona virus disease originated in Wuhan, China in late 2019 and a Novel Coronavirus is known to be the cause of this disease. This was declared to be a pandemic by the World Health Organization on March 11th, 2020 as by then this disease has infected 114,000 persons and was present in 114 nations³. The COVID-19 pandemic has caused great problems to every nation's public health systems as well as to the healthcare workers (HCWs), majorly the nurses, who remain in constant contact with infected individuals and provide care to such patients. Zhu et al. (2020) conducted a study in Wuhan which showed that the HCWs were suffering from anxiety, high stress levels, as well as depression. However, this research did not focus on the nurses on frontline duties. Simonetti et al. (2021) revealed that the nurses who remain in touch with the patients while care giving often face higher infection risks, feelings of burnout, anxiousness, depression and fear.

HCWs have been responsible for saving lives, in a situation where they face higher infection risk and increased workload. HCWs also face the problem of social isolation and even discrimination in case they are unquarantined. Therefore, according to Kang et al. (2020), HCWs are bound to experience psychological distress and complicated emotions. Ibáñez-Vizoso et al. (2020) state that the attention, ability of making clinical decisions, as well as cognitive behaviour of HCWs will be impacted by such mental problems, which will lead to increasing errors in medical procedure and further cause higher risk to patients. It is known that in situations of disasters, the well being of individuals is impacted in a lasting manner by the stress experienced. Thus, it is important to pay attention to the mental health problems faced by HCWs in this pandemic. This research focuses on the levels of anxiety which was experienced by nursing staff of tertiary level hospitals in Delhi, India while the state was going through the second wave of the COVID-19 pandemic which created high stress on the public health system.

Review of Literature

Nurses are at the frontlines while taking care of patients. They face high workload which can lead to increasing stress and work burnouts. The work done by nurses is highly demanding and thus nurses are likely to develop mental health problems like anxiety, stress, depression and more (Maharaj et al., 2019). Further, Gong et al. (2014) state that the healthcare sector is heavily dependent on nurses as the health workforce is largely made up of nursing staff. Nurses play large part in improving health of a community as they ensure provision of patient care and are also involved in supporting the patient's family, creating awareness about health education, and rehabilitating the patients. Nurses spend the highest time with patients as their work involves many areas and due to this, they are able to participate in each part of healthcare network (Pappa et al., 2020). Thus, it is clear that the nursing occupation is demanding and causes stress.

It is common to find HCWs suffering from mental illnesses if there is a disease outbreak for instance, outbreak of Ebola, severe acute respiratory syndrome and the like (Li et al. 2015). According to Pang et al. (2021), 23.2 per cent of HCWs were found to be experiencing anxiety during the recent pandemic, and this number is higher than that of the general public. Alwani et al. (2020) state that nurses were found to be experiencing the most anxiety and had the largest rate of prevalence when compared to other HCWs. Such high anxiety levels may lead to increased accidents, lower quality of life and decreased efficiency. 'Anxiety' refers to feelings of uneasiness due to worry about an event, both real and imagined, which is seen as threatening (Spielberger, 2010). In pandemics, HCWs who are in constant contact with the infected patients are often seen to be experiencing anxiety. These HCWs also see the patients suffer or even die, and such traumatic experiences lead to increased anxiety and fears (Pappa et al., 2020).

Even though low anxiety levels can lead to individual being motivated and excited, higher levels can harm the physio-psychological health of the person and can even impact how they perform at work. Studies show that high anxiety levels can lead to low desire for eating, feeling dizzy, having disturbed sleep, and nausea (Trougakos et al., 2020). Lee et al. (2020) further stated that high anxiety levels also negatively impact certain bodily functions, lead to harmful coping mechanisms like alcoholism, drug use and more, cause stress, depression and even suicidal feelings. If the anxiety is not treated, it can have lasting impact on the performance of nurses on duty, as well as job satisfaction levels, and this may lead to absenteeism (Simonetti et al., 2021). By ensuring that measures are taken to manage anxiety levels in nurses, such harmful impacts can be avoided. Thus, these measures are important for maintaining a nursing workforce which is highly engaged.

In the Covid-19 pandemic, nurses experienced anxiety due to the fear of unknowingly spreading the disease and of catching the infection themselves. Shanafelt et al. (2020) stated that the anxiety levels in nurses was caused by unavailability of personal protective equipment (PPE), fear of getting infected, inaccessible testing facilities, fear of unknowingly spreading the infection, fear of getting no support from employer upon becoming infected, unavailability of child care services in lockdown time, fear of being asked to work in a ward which is not familiar, as well as low levels of information about the disease.

The spread of Coronavirus has changed the manner of working, socializing, living, shopping, and even the planning for future events. Even though media has sufficiently covered the impact of such events on the psychological well-being of people, the mental health of individuals being directly impacted from this pandemic have not been paid enough attention (Bloom et al., 2017). It is important to consider this aspect as previous studies show that during international disease outbreaks, individuals who suffer from anxiety are likely to have higher levels of post-traumatic stress, anxiousness, suicidal thoughts, and anxiety about health (De Brier et al., 2020). Research should thus focus on determining anxiety levels in nursing staff during the pandemic. For this purpose, the researchers made use of two scales, namely General Anxiety Disorder 7-Item (GAD-7) Scale and Coronavirus Anxiety Scale (CAS). The GAD-7 scale is used by many and is frequently tested to make sure that it is valid and reliable; the CAS is a scale which has been developed recently. GAD-7 measures general anxiety levels of respondents and CAS measures anxiety which is specific to corona.

Spitzer et al. (2006) developed the GAD-7 so that general anxiety levels can be measured even in a variety of populations and settings. GAD-7 was originally developed as a screening tool to determine generalized anxiety disorder in primary care settings with 13-items (Spitzer et al., 2006). Correlation analysis was done for these items and the total score and the seven items were chosen which correlated the most with the total 13-item scale (Spitzer et al., 2006). The GAD-7 scale is very helpful for studies focused on anxiety disorders (Johnson et al., 2019). This scale is used for studying a variety of anxiety disorders due to the high co-morbidity levels caused by GAD. For samples having general and psychiatric populations, the GAD-7 has been psycho-metrically tested to be reliable for measuring symptoms related to GAD (Rutter and Brown, 2017; Hinz et al., 2017).

Spitzer et al. (2006) state that the GAD-7 is sensitive as well as specific psychometric properties for measuring GAD symptoms. Spitzer et al. (2006) conducted a study involving 965 patients who were interviewed in order for diagnosis of GAD. Further psychometric properties of this scale have been evaluated in heterogeneous samples used for diagnosis of different disorders. In case of specific anxiety disorders, Beard and Björgvinsson (2014) stated that the GAD-7 scale showed high internal consistency and validity, however the specificity was low and there were many instances of false positives. For analysing the factor structure of GAD-7, a study of inpatient and outpatient individuals was done in a heterogeneous psychiatric sample before and after treatment by Johnson et al. (2019). In order to measure the convergent and divergent validity, Johnson et al. (2019) further focused on measuring depression, well-being as well as more such measures of anxiety. Johnson et al. (2019) observed that the scale was highly consistent internally and had convergent validity, in addition to having acceptable variation levels in different treatment groups.

The Coronavirus Anxiety Scale (CAS) was developed a short time ago by Lee (2020) in order to help in identification of the persons who are suffering from anxiety and fear due to the recent pandemic situation. This scale is a 5-item mental health screening tool and focuses on helping healthcare professionals in

effective and efficient identification of individuals who are likely to be suffering from dysfunctional anxiety caused by the Covid-19 pandemic (Lee, 2020).

The scale makes use of each item to focus on a different physiological fear or anxiety symptom which is caused by thoughts or information concerning the pandemic. Online data collected from 775 adults who faced high level anxiety due to the pandemic, was analysed to develop CAS. The study showed that this scale is highly reliable ($\alpha = 0.93$), for factor and construct validity, and measurement equivalence for demographics like age and gender (Lee, 2020). It was observed that the scores of this scale were correlated to diagnosis of corona virus disease, coping mechanisms involving alcohol, drugs, religion, feeling hopeless, suicidal tendencies, opinions regarding the American President, as well as products from China. Such correlations make it clear that the CAS is an adequate scale for measuring mental health as the pandemic anxiety was related to disruptions in psychological and interpersonal processes and even behaviours (Lee, 2020). The diagnostic properties of this scale were found to be good (AUC = 0.94, $p < .001$) and CAS has high accuracy for differentiation between people who have dysfunctional anxiety and who don't, as the scale has an optimized cut score of ≥ 9 , sensitivity of 90 per cent and specificity of 85% (Lee, 2020). In order to build the scientific legitimacy of CAS, it is important for independent studies to look into the psychometric properties of this scale.

In order to check the validity of CAS, Singh (2021) did a research which involved 238 people in the Indian population. The selected respondents were the individuals who had 1 hour of minimum daily exposure to the pandemic related matters such as social media, television and the like so that these individuals could form their thoughts about the situation in a 2-week period before attempting to fill the e-questionnaire. This study showed that CAS can be used in the Indian population for measuring dysfunctional Coronavirus anxiety in people. According to Singh (2021), this scale is helpful in quickly measuring the level of dysfunctional Coronavirus anxiety as it is only made up of 5 items.

Objectives

The basic objectives of the study are:

- To determine the anxiety level of the nurse respondents working in the Covid-19 designated multi-specialty tertiary level hospitals in Delhi (India).
- To compare the anxiety level of nurse respondents during less Covid-19 cases and during peak of Covid-19 cases.

Hypothesis 1: There is no difference in anxiety level of respondents during two time periods (during less cases of Covid-19 and during peak of Covid-19 cases).

Hypothesis 2: There is no difference in Coronavirus Anxiety level of respondents during two time periods (during less cases of Covid-19 and during peak of Covid-19 cases).

Research Design – The research design applied to the study is Multiple Cross-Sectional Descriptive Research Design. In such research designs, the sample is drawn more than once and data collection is also done more than once. The findings of the study variables are interpreted in detail.

Methodology

Sampling: Two COVID-19 designated private multi-specialty tertiary level hospitals were selected purposively. The respondents (nurses) were selected at two points of time. Firstly, during last week of December 2020 when the intensity of Covid-19 cases in Delhi recorded quite low. These selected respondents during this period were put in 'Group A' category. Secondly, when number of cases of COVID-19 were very high during the first week of May 2021; these selected respondents in May 2021 were put in 'Group B' category. The respondents were selected randomly with the help of systematic random sampling technique from the list of nurses provided by the hospitals. The number of selected respondents during first phase was 175, but due to unavailability of some of them, the actual data were collected from 148 respondents. During the second phase the sample was drawn of 150 respondents, but actual data were collected only from 102 respondents. So, the sample size of 'Group A' and 'Group B' was 148 and 102 respectively.

Tools of Data Collection: Two standardized anxiety measuring scale was used for data collection. The number of statements of the scale is 12. There are two sections of the scale. First 1 to 7 items measure the general anxiety of respondent (based on i.e. GAD-7 scale developed by Spitzer et al. 2006), and items numbering 8 to 12 measure the corona virus anxiety of the respondents (based on i.e. CAS scale developed by Lee, 2020). Each statement is measured on four points, that 0, 1, 2, 3 – No to Very High. The score of all the seven statements are added for each respondent to generate a total anxiety score. The scores of each respondent would vary from 0 to 21. Zero means 'No anxiety'. Then as per the norms of the scale, the total score for first 7-items was divided into three anxiety levels. The respondent having total score up to 5 is put in the category of 'mild' anxiety, the respondent whose total scores varies from 6 to 10 is put in the category of 'moderate' anxiety, and the respondent whose total score is 10 and more is put in the category of 'severe' anxiety level. Hence, the levels of anxiety are– No Anxiety, Mild Anxiety, Moderate Anxiety, and Severe Anxiety for GAD-7 scale.

In the case of Coronavirus Anxiety Scale, there are five statements. The total score of this anxiety is computed for each respondent by adding the numerical values of five items. Total scores of each respondent would vary from 0 to 15. The total score of each respondent was divided into two categories. The total scores in the range of 9 and more is considered a very high anxiety on account of corona virus which is known as 'dysfunctional anxiety', and the total scores less than 9 is considered low anxiety due to corona virus. Dysfunctional anxiety means the anxiety arising due to fear of getting Covid-19 infection. The fear is irrational and creating persistent uneasiness among the people suffering from it.

Findings

The Statistical Package for Social Sciences (SPSS) has been applied to do the statistical analysis of the collected data. Mainly cross tabulation with Chi Square test has been applied to do the required analysis. The frequency distribution of background variables has also been obtained and the findings of these variables are presented in Table 1. These variables are Age, Marital Status, and Department of work in the hospital. The Table shows that there are three age categories of respondents. It is observed that in the lowest category of age (21 to 25 years), the percentage of respondents is 32.4, whereas the middle age category (26 – 35 years) constitutes 44.4 per cent. Percentage of married respondents is 51.2, and remaining is unmarried.

It is also observed from the table that 58.4 per cent and 20.0 per cent respondents work in Critical Care and COVID Wards at the time of data collection. Therefore, such respondents are prone to more risk of contracting COVID-19.

Table 1
Distribution of Respondents by Background Variables (N =250)

Variable	Options	Frequency	Percentage
Age	21 – 25 years	81	32.4
	26 – 35 years	111	44.4
	36 + years	58	23.2
Marital Status	Unmarried	122	48.8
	Married	128	51.2
Department	Critical Care@	140	58.4
	Wards	39	15.6
	Covid Wards	65	20.0

@ ICU, Heart command, Neuro, PICU, Emergency, Casualty

Comparison of Anxiety Level of respondents of Group A and Group B

There are four categories of general anxiety level of respondents (Nurses) who are working in private multispecialty tertiary level hospitals which are also designated Covid-19 hospitals. The general anxiety level of the respondents was measured with the help of a standardized scale (GAD-7). The four categories of the total scores have been made, which are– No Anxiety, Mild Anxiety, Moderate Anxiety, and Severe Anxiety. The Chi Square test has been applied in order to assess the difference in anxiety level of two groups of respondents. The findings of the statistical analysis are presented in Table 2. It is observed from the table that percentage of respondents, having no anxiety is high in the case of Group A (34.5%) in comparison to Group B (29.4%). It may be mentioned here again that the data pertaining to anxiety were collected from the respondents of Group A when the Covid-19 cases were less in Delhi (last week of December 2020). On the other hand, the data on anxiety were collected from the respondents of Group B when Covid-19 cases were on the peak in Delhi (First week of May 2021). This might be the reason of 'No Anxiety' cases are less of Group B.

Similarly, the percentage of 'mild' anxiety of respondents is more in the case of Group A (40.5%) as compared to Group B (12.7%). It is further observed from the table that moderate anxiety level cases are about three times more among the respondents of Group B (39.2%) in comparison to respondents of Group A (13.5%). It is quite obvious that nurse respondents experience more anxiety when they have to work among more Covid-19 patients in the hospitals, as the fear of contracting the virus is quite high due to more exposure on account of more Covid-19 patients. On the other hand, the reporting of the deaths of the medical and paramedical persons due to Covid-19 in print as well as digital media also enhanced the anxiety level of the respondents. Similar trend is found of 'severe' anxiety level among two types of respondents. The percentage cases of such anxiety are quite high in the case of Group B respondents (18.6%) as compared to respondents of Group A (11.5%).

The Chi Square value in the table indicates that there is a significant difference of anxiety level among the respondents of Group A and Group B (Chi Square = 35.211, significant at .01 level). The significant difference is observed in the percentage cases of respondents of two categories of 'Moderate' Anxiety level and 'Severe' Anxiety level. These percentages are high in the case respondents of Group B in comparison to Group A.

Hypothesis 1: There is no difference in anxiety level of respondents during two time periods (during less cases of Covid-19 and during peak of Covid-19 cases).

From the results of Chi Square presented in Table 2, it is observed that the Chi Square value is significant at 0.01 level. This clearly indicates that the anxiety level differs significantly among the respondents of two groups, that is, Group A and Group B. Hence, the hypothesis stated is not accepted.

Table 2

Comparison of Anxiety Scores between two Groups (Group A = Data collected from respondents in December 2020 when Covid-19 cases in Delhi were less, Group B = Data collected from respondents first week of May 2021 when Covid-19 cases in Delhi were at the peak)

Categories of Anxiety Scores	Group A	Group B (N =102)	Total (N=250)
No Anxiety	51	30	81
	34.5%	29.4%	32.4%
Mild Anxiety	60	13	73
	40.5%	12.7%	29.2%
Moderate Anxiety	20	40	60
	13.5%	39.2%	24.0%
Severe Anxiety	17	19	36
	11.5%	18.6%	14.4%

Chi Square = 35.211, significant at .01 level

Comparison of Corona Virus Anxiety level of respondents of Group A and Group B

The total scores of Corona virus Anxiety Scores (CAS) was calculated by adding the five items of the scale of each respondent, and the total scores was divided into two categories. This has been explained above. The two categories are 'People without dysfunctional anxiety' and 'People with dysfunctional anxiety'. The Chi Square test has been applied to compare the Corona Virus Anxiety categories between respondents of Group A and Group B. The results of the analysis are presented in Table 3. The table reveals that 99.3 per cent respondents of 'People without dysfunctional anxiety' are in the case of 'Group A' respondents. It may again be mentioned here that the data on Corona virus anxiety scores were collected from 'Group A' respondents during the period when less cases of Covid-19 were found in Delhi, and it was in the month of December 2020. On the other hand, the similar data were collected from the respondents of 'Group B' during the first week of May 2021 when the cases of Covid-19 were on the peak in Delhi. The table further indicates that the cases of 'People with dysfunctional anxiety' are quite high in the case of respondents of Group B as compared to the respondents of Group A. The Chi Square value in the table shows that there is a significant difference of Corona virus anxiety effect among the respondents of Group A and Group B (Chi Square = 45.904, significant at 0.01 level).

Table 3

Comparison of Coronavirus Anxiety Scores between two Groups (Group A = Data collected from respondents in December 2020 when Covid-19 cases in Delhi lower down, Group B = Data collected from respondents first week of May 2021 when Covid-19 cases in Delhi were at the peak)

Categories of Anxiety Scores	Group A (N =148)	Group B (N =102)	Total (N=250)
People without dysfunctional anxiety	147	72	219
	99.3%	70.6%	87.6%
People with dysfunctional anxiety	1	30	31
	0.7%	29.4%	12.4%

Chi Square = 45.904, significant at .01 level.

Discussion

The results of the study indicate that moderate and severe anxiety levels among the respondents of 'Group B' are quite high in comparison to 'Group A' respondents. This shows that more the number of cases of Covid-19 in a hospital more would be the anxiety level of the nurses. The main reason of this may be that the nurses are exposed more to the virus as they have to provide care to the patients and therefore, have to go close to them, and this creates fear and high risk in contracting the virus. The second reason may be that many deaths are reported of front line workers of the designated Covid-19 hospitals. This may also be responsible for creating fear and anxiety among the nurses. The same is the case with the results of CAS. The dysfunctional anxiety percentage of cases is more among the respondents of 'Group B' in comparison to 'Group A' respondents. The main causes for this type of anxiety level may be the same as of the general anxiety level cases.

Lee et al.⁴ used Corona Virus Anxiety Scale (CAS) scale for general public (Sample survey of 1237 MTurk workers) and using CAS found that during COVID-19 pandemic the people are developing dysfunctional anxiety. This anxiety is creating various difficulties among the general public. Researchers of another study⁵ used this scale to examine the anxiety among the frontline nurses. The cross-sectional study was conducted with 325 nurses from Philippines. According to the survey results more than 37 per cent of the nurses were found suffering from dysfunctional anxiety. Another author⁶ also used CAS to examine the dysfunctional anxiety of Mexican HCWs. A survey was conducted among 231 HCWs working as frontline professionals (emergency rooms and triage) and in intensive care units dealing with COVID-19 patients. The survey of HCWs concluded that more than 30 per cent of the frontline HCWs are suffering from dysfunctional anxiety based on the translated CAS tool. Similar research was conducted by Elshami et al. (2021) using CAS tool with radiographers working in healthcare settings⁷. The radiographers are exposed to known patients of Covid-19 when they conduct CT scanning or other tests. The anxiety of dealing with Covid-19 positive patients was examined by this research. More than 50 percent of the radiographers (total sample size was 903) were provided with infection control training related to Covid-19. This survey concluded that only 10 per cent of the respondents were found anxious based on CAS tool. The small percentage might indicate that since their exposure is limited with the patients hence most of them are not found anxious.

As the Covid-19 is recent phenomenon many studies have not been done, in discussion the findings of other studies done cannot be included.

Conclusion

The study was undertaken to understand the effects of COVID-19 on the anxiety level of nurses working in the designated COVID-19 hospitals. Two private multi-specialty tertiary level hospitals were selected and the requisite data were collected from the nurse respondents with the help of standardized measuring scale of anxiety at two points of time, that is, in December 2020 when the cases of corona virus were less. The respondents of this category are named as 'Group A'. Second time the data were collected from the same hospitals from the nurse respondents with the same measuring anxiety scale, and such respondents have been named as 'Group B'. The number of respondents of 'Group A' is 148, and in the case of 'Group B', the number of respondents is 102. The collected data were entered in the computer with the help of excel software, and the SPSS was applied to do the requisite statistical analysis. The Chi Square test was applied in order to understand the effect of corona virus on the respondents at two points of time. There

are 12 statements of the measuring scale, and first seven statements (GAD-7) measure the general anxiety level of the respondents. The sum of all these seven items is divided into four categories– No Anxiety, Mild Anxiety, Moderate Anxiety and Severe Anxiety. The remaining five statements measure the Coronavirus Anxiety (CAS). The total of these five items of each respondent was divided into two categories, that is, 'people with dysfunctional anxiety' and 'people without dysfunctional anxiety'. The findings of the analysis are given below:

- 'Severe' anxiety level of respondents is more when the COVID-19 patients admitted in the hospitals are more as compared to the period when COVID-19 patients are admitted less. Same is the case of 'moderate' anxiety level of the respondents.
- The 'People with dysfunctional anxiety' among the respondents during the period of more cases of COVID-19 is quite high in comparison to the respondents during the period of fewer cases of COVID-19 cases.
- The anxiety level of nurse respondents increases when the COVID-19 cases increase and vice-versa.

Implication

COVID-19 has affected the anxiety level of the nurses, especially, those who have to attend to the COVID-19 patients. More the number of patients of COVID-19, more would be the anxiety level. This might be true with all those frontline workers who are directly in contact with COVID-19 patients. This is quite obvious as the exposure to Coronavirus is more to such workers. Therefore, the appropriate safety measures should be adopted by such workers in order to avoid contracting of Coronavirus. Online counseling for the nurses and other frontline workers should be carried out regularly in order to reduce the anxiety level of these workers.

Future Scope

Such studies should be conducted periodically for different frontline workers who directly attend to Covid-19 patients in order to understand the nature of anxiety of such workers. This would help in designing the appropriate strategy in a better way to mitigate the anxiety level of such workers.

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Community Connection: Need Some Action for Health

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Abstract

Connecting with community in development programmes, especially in health is a decisive component. It is required at planning level as well as during implementation and monitoring, developing the understanding of needs and ownership on resources. Planning process needs to be in the hands of community itself, so that they can ensure their participation in execution and monitoring. Though people are not experts of managerial issues, and lack technical knowledge but with a support system a lot can be achieved. In the Health Sector, establishing the connection with community emerged in the form of Community Monitoring under NRHM and now it is present as Community Action for Health. Present paper is an effort towards analyzing issues, understanding context and summarizing the process of connecting community for health with the background of communicating health in Rajasthan.

Key words: Community, NRHM, Health, Communitization, CAH.

Community is a social unit with commonality such as norms, religion, values, customs, or identity. Communities may share a sense of place situated in a given geographical area (e.g. a country, village, town, or neighborhood) or in virtual space through communication platforms. Communities may have intent, belief, resources, preferences, needs and risks in common, affecting the identity of the participants and their degree of cohesiveness.

Every community has needs and deficits that ought to be attended to and many community organizations focus on them. But it is also possible to focus on assets and strengths -- emphasizing what the community does have, not what it doesn't. Those assets and strengths can be used to meet their needs to improve community life. To draw upon a community's assets, we first have to find out what they are. Community asset can be a *person – any leader, an expert or influential person, physical structure or place* such as a school, hospital, library, recreation center, social club, a public place -- a park, or other open space etc. Community resources created by community itself or government or obtained as natural resource is anything that can be used to improve the quality of community life. But some time belongingness or ownership is not found in community towards these resources and hence these resources are not protected or presented by community.

Community engagement is the process of working with groups of people related by location, interest, or similar issues that affect their well-being. Community engagement is to build trust, enlist new resources and allies, create better communication, and improve overall health outcomes. The rationale for community-engaged and health promotion is largely rooted in the recognition that lifestyles, behaviors, and the incidence of illness are all shaped by social determinants.

Health inequalities have their roots in larger socioeconomic conditions thus health issues are best addressed by engaging community partners who can bring their own perspectives and understandings of community life and health issues¹.

Individuals and families are part of communities, and the role of communities is crucial to promoting health equity for several reasons. To address health equity, behavioral health promotion continues to show little

success in reducing disparities. Community health refers to the overall well-being of a community at all levels.

Connecting community for public health goals- A healthy community is the foundation for achieving all goals, as it is essential for a productive society. Addressing the root causes of health inequities, such as the social determinants of health, is important in part to enable sustainable interventions by engaging multiple sectors and addressing multiple health outcomes.

Health care is the key to the attainment of goal of Health for All. It reflects the values of social justice, where every person has the right to make choices regarding their lives, and participation, where every individual has voice to make such choices. The Alma-Ata Declaration of 1978, emerged as a major milestone of the twentieth century in the field of public health, and it identified primary health promotion and collective action as important tools. It was expected that such empowerment where people take charge of their own lives and act to change their own life situations would result in improved health.

Past 70 years governments and political leaders are quoting and reaping the soul sense and recommendations of Bhore committee made in 1946. India's Health Survey and Development Committee, under the leadership of Sir Joseph Bhore, recommended that for health care to become accessible to all people a greater and more active involvement of community was required. As per the comments of the Bhore committee community health cannot be attained until "individual has learnt to realize that his neighbor's health is a matter of as much concern to himself as his own, that it is his own effort which must help to decide the health pattern of the community circle in which he lives and that only a combined co-operative endeavor on the part of all workers in the many fields of activity in that circle can yield results that are worth achieving²."

Connecting with problems, issues, concerns of community is receiving greater interest and support in NHM in India. Governments, communities and nongovernmental organizations (NGOs) are exploring the possibility of creating innovative types of partnerships for health which could contribute to making the goal of "health for all" a reality. The mechanisms for the engagement of community members, civil society NGOs in the health sector in India were initiated with the launch of the second phase of the National AIDS Control Program in 1999. A wide range of NGOs were engaged in the delivery of targeted interventions, preventive services, and program monitoring and evaluation. This engagement has continued and matured other initiatives, such as tackling the challenges India faced in polio elimination, especially vaccination hesitancy which were effectively addressed through increased participation on the part of faith-based organizations, professional associations, CSO, CBOs and NGOs. However, most of these initiatives for CSO and CBO engagement in health services were program specific, focused on limited geographical areas and had a narrow scope of implementation.

In the NRHM Framework for Implementation, it is clearly articulated that communities must be "empowered to take leadership in health matters". In order to ensure the reach of programs and schemes to reach every segment of society, special provisions have been made. Communitization was one of the components of the NRHM and included the creation of a new cadre of female community health workers– accredited social health activists. The Village Health Sanitation and Nutrition Committees (VHSNC) set up under the NRHM are envisaged as being central to local level community action under NRHM, which would gradually develop to support the process of decentralized health planning.

These initiatives resulted from the recommendations and advice of the various task forces that had been set up in 2004–2005 to design the architecture of the NRHM in India. The task forces included representatives of civil society, public health activists and community representatives. The term “Community Action for Health (CAH)”, was subsequently coined to denote communitization at the operational level. To provide guidance on the roll-out of communitization and CAH processes, in 2005 the Ministry of Health and Family Welfare constituted the Advisory Group on Community Action, comprising eminent public health experts and practitioners with experience in community engagement and empowerment. Thus VHSNCs are expected to act as leadership platforms for improving awareness and access of community for health services, support the ASHA, develop village health plans, specific to the local needs, and serve as a mechanism to promote community action for health, particularly for social determinants of health^{3,4}.

The National Health Policy (India) 2017 stressed in its goal about the attainment of the highest possible level of health and well-being for all, at all ages, includes universal access to good quality health care services without anyone having to face financial hardship as a consequence. This would be achieved through increasing access, improving quality and lowering the cost of healthcare delivery⁵. Without ensuring the active role of community in health whether it is a matter of planning or execution or the monitoring, it is very difficult to achieve the goal of universal coverage of health. Community action in health has met with a mixed response and despite the many instances of expressed interest, it has rarely been vigorously taken up at a central level or been systematically translated into broad national action. First of all we need to make clarity on the concept of community action. There are many terms in use as community participation, community involvement, community ownership and community action. Each term has its deferent sense of meaning and connotations. Purpose of the entire connotation regarding community is to connecting with people.

The increasing popularity of the term “community action for health” responds too many of the conceptual and operational limitations inherent in the term “community involvement”. Not only does it imply a partnership between the community and the health sector, it goes further and also denotes a pro-active role for the community and the implicit objective and obligation of the formal sector to share power rather than merely to foster cooperation. In the context of community action for health the community is an agent for health and development rather than a passive beneficiary of health and development programs⁶. Ideally, community action for health arises from within the community itself, and is then essentially run and supervised by the community using community-generated resources, with collaboration from the formal sector in the form of technical and financial support as and when required.

To address health in a meaningful way we must start by redefining what health is and considering the relationship between wellness and the key components of our living and working environments. “In many cases, solutions to our health challenges can be mounted at the local level, with people and communities taking the lead....It is within communities where collaboration can occur most effectively, where resources can be pooled most efficiently’ and where the results of positive action and change are most manifestly recognized⁷.” The policy-makers and health care providers have always appeared to have remained skeptical about the benefits of the community engaging itself in health care activities. They have been even more hesitant about the community's role in defining health problems, prioritizing them and contributing to their solution.

Health planners are now appreciating the role of the community in health matters. They thought that now there is need to invest on preventive and promotive part rather than curative aspects of medicine and the

role of community has emerged as more participative than a passive receiver. Community Action for Health (CAH) is one of the pillars of the National Health Mission (NHM) in India, which places people at the centre of the process of ensuring that the health needs and rights of the community are being fulfilled. It gives communities an opportunity to participate and provide regular feedback on the progress of the NHM interventions in their areas, thus contributing to strengthening health services and 'Bringing Public into Public Health.' The CAH processes is being implemented in 22 states covering 2,02,162 villages across 353 districts – that is nearly 32 per cent of villages and 54 per cent of the districts in the country⁸.

Community Engagement for Health in Rajasthan

Under the support of UNFPA, State of Rajasthan initiated a scheme in the field of family planning to ensure access and utilization of family planning services at doorstep by appointing the male and female (the Couple) as volunteer in each village to ensure the home based supply of contraceptives. This *Janmangal* Scheme was first of its kind to ensure community participation ownership and management in health services. After piloting the scheme in two districts, it was expanded in entire state and was functional till 2013. Though ASHA has replaced the *Janmangal* Couple now, but after one and half decade, communities are still facing problem to obtain the family planning contraceptive services at doorsteps even the ASHA worker is doing the same and getting the incentives for the purpose. This initiative of community engagement was very helpful in reducing the TFR and involving community in health care delivery services.

Under World Bank supported IPP IX Project, Rajasthan initiated the *Swasthya Karmi* Project based on the successful implementation of Shiksha Karmi Project in education sector. *Swasthaya-Karmis* were to work for community on preventive, promotive and curative health. Scheme of *Swasthaya-Mitra* under NIROGI Rajasthan (2019) declared by Chief Minister of Rajasthan is another effort towards involving community for ensuring Health for All and making society diseases free (NIROGI). Under the scheme at each village two volunteers will be selected as *Swasthaya-Mitra* they will be representatives of community having good communication skills and willing to give their time to community service. *Swasthaya-Mitra* will be inducted as member in VHSNC also. Key role of *Swasthaya-Mitra* is to serve community by communicating on health issues.

Under NRHM, selection of ASHA Sahyogini, formation of VHSNCs and their capacity building, Community Monitoring Project in 6 Districts with involvement of NGO was done to ensure the community ownership, participation and engaging community leaders by giving responsibility of health to Pachayats. However, these efforts have turned out to be only casual in approach area specific. In the first phase of Community monitoring (now renamed as Community Action for Health) four districts were chosen, Alwar, Chittorgarh, Jodhpur and Udaipur in Rajasthan. The Community Monitoring process was carried out in 180 villages, 36 PHCs and 12 blocks from September 2007 to November 2009. As per the first phase report of Population Foundation of India and Center of Health and Social Justice, the process of community monitoring not only helped in increasing the utilization of vaccination services but also motivated ASHAs to visit door-to-door for service provision on a regular basis. The process also helped in effective utilization of public health services by the community. Unfortunately, this community monitoring process in Rajasthan was discontinued on account of withdrawal of support from NHM to the related NGOs⁹.

Scale of implementation of CAH with support of AGCA Secretariat was re-initiated in the State in 2017 after a gap of seven years and scaled up in whole state by development of capacities of VHSNC members and supervisors for mentoring support. SIHFW Rajasthan has initiated the lead role to CAH activities to ensure. Accountability mechanisms can help ensure that funding reaches its destination and policies and

programs are implemented as intended, counteracting some of the barriers cited to accessing quality care such as poor provider practices, lack of facility resources and corruption in the health system. Though community accountability is featured as a key quality assurance strategy within the NRHM, it has faced several political and other barriers to implementation. To ensure the accountability meaningful involvement of citizens/CSOs in planning and budgeting, citizen testimony in public hearings/oversight committees or community representation on health committees is mandatory.

Diverse approaches and terms has been utilized in community based monitoring of health services include: Citizen Voice and Action (World Vision), Partnership Defined Quality (Save the Children) , Community Score Card (Care), Citizen Report Card (World Bank, others), Social Watch (White Ribbon Alliance),Community-Based Monitoring Programme (Plan International). Accountability mechanisms, however, require the government and providers to be open to receiving and addressing feedback^{10,11}. As Rajasthan gears up to bring about the 'Right to Health Care Act', the first of its kind in the country, it held its first state consultation to finalize the formulation of the Act on 13 March 2019 at the State Institute of Health and Family Welfare (SIHFW), Jaipur¹². Subsequently, a number of consultations have been done so far. Representatives from civil society organizations, development agencies and experts from relevant fields including public health and legal have provided their inputs in the process.

Right to Health Care Act in Rajasthan will be the landmark to decide the future benchmark of community engagement in public health matters. This will be effective tool as well as weapon in the hands of people to receive the justice in health matters and also ensure the accountability of health system towards community. Years back Mahatma Gandhi said on issues of sanitation "If we only realize that the public is a part of us and that we in turn are part of it, our unsanitary conditions would become impossibility and by freeing ourselves of disease etc would add to the nation's strength and even its wealth". This is applicable on all aspects of development includes health¹³.

Community engagement and Universal Health Coverage

Universalizing access to health care is one sustainable development goal that India is committed to providing in all rural and urban areas. Aggregate national indicators do not highlight the huge disparities which exist across the states and districts of India. A baby girl born in Rajasthan, for example, is at a six fold higher risk of dying before her first birthday than a baby girl born in Kerala. Across almost every health indicator, health inequity can be seen easily in the country. Rural, less educated and poorer sections of our population including *dalits* have a worse health status than more affluent, higher educated, urban and upper caste groups. Women too are worse off in health status and access to principally and theoretically we all are against the social exclusion of communities vulnerable from health entitlements but there is need to make more efforts to ensure social inclusion of certain people, communities those are abandoned from the services.

Community empowerment is a process of enabling communities to increase control over their lives. By addressing determinants of health community ownership and action are brought about. Empowerment strategies enable individuals and their communities to access appropriate information; develop critical thinking and decision-making capabilities to solve their own problems. 'Universal coverage' refers to a scenario where everyone is covered for basic health care services. This is a scheme, under which all citizens, regardless of their economic, social or cultural background will have the right to affordable, accountable, and appropriate health services and benefits. To have access to quality health care regardless of financial status, quality of health care, institutions, hospitals have to be improved¹⁴.

Recommendations of The High Level Expert Group constituted by the Planning Commission of India, 2011, suggests the needs to adopt UHC both as a developmental imperative and as an ethical commitment to equity in a vital area of human welfare¹⁵.

A dream of Healthy India, “*Ayushman Bharat*” was announced with two major initiatives, Health and Wellness Centers (HWCs) and an ambitious National Health Protection Scheme (NHPS). Engagement of community is first condition to ensure the goal of Ayushman Bharat. Concept of wellness can be achieved through people’s participation. Creation of Ayushman Ambassador in each coverage area is a good effort towards community engagement. Provision of Electronic Health Record (EHR) of every citizen will ensure the UHC¹⁶. NHP 2017 aims to ensure UHC and reinforce the trust in public health-care system by strengthening and expanding the services. It is difficult to say that NHPS will be able to provide health care but only medical care and that too in patient care largely at private/corporate hospitals.

It is expected that through UHC financial protection to people will be ensured in some extent as out-of-pocket expenditure will be reduced. If health system strengthened and ensure the coverage of services up to the outreach and vulnerable and all sections of society the health equity will be promoted. As per WHO Health equity is defined as the absence of unfair and avoidable or remediable differences in health among population groups defined socially, economically, demographically or geographically¹⁷. Implications of UHC will be seen in reduction of poverty by reducing the risk of ill-health and achieving the health equity. Chief Minister Chiranjivi Swasthaya Bima Yojna by Rajasthan government further move towards UHC. It provides coverage of more families by eliminating limits of income in insurance.

Utilizing the Power of Community- Joining a community in programs can give more opportunity to achieve the goals. Community can be strong mentor in itself and willing to guide and give the benefit of experience means that making costly mistakes can be avoided which could have potentially derail the community health extension work. Communities, by their very nature, contain a diversity of opinion, ideas, and knowledge that you would never encounter alone. Just being in proximity of such a whirlwind of ideas means that you’re constantly challenging yourself to think creatively and constantly reconsider what you know.

Community Engagement and COVID-19 Pandemic

Community engagement is a pre-requisite for risk communication, which entails effectively communicating the threat due to the virus, instilling the right practices and etiquette, and combating rumors and stigma. Efforts of community engagement has always been more complex and required strengthening of community platforms like SHGs, VHSNC in Villages and *Mahila Arogya Samitis* (MAS) in urban slums through regular orientations, trainings, meetings and handholding support of leadership in COVID-19 management. Enhancing testing for SARS-CoV-2 and concomitant expansion of quarantine, isolation, and treatment activities along vast expanses are tremendously strain our thin public health machinery. This will not be possible without community participation at every step. So, looking into the importance of community engagement for health, SIHFW Rajasthan under partnership with NHM initiated the campaign to straightening the capacities of VHSNC Members in Rajasthan. Under this campaign SIHFW reached up the 20000 VHSNCs and 114000 members. During this campaign VHSNCs members informed about “*Nirogi Rajasthan*” 10 public health areas (includes-Maternal and Child Health, Vaccination (COVID vaccination) Nutrition, Adolescent health, Family Planning, NCD and Communicable Disease, Food Safety, Environment Health and pollution control, Prohibition of tobacco use) covered and key messages were percolated regarding COVID appropriate behaviour. Development of Village Health Plan and Community Monitoring of

health services were discussed in the programme. Further, mitigation activities in case of considerable rural penetration of COVID-19 will require efforts of dreadful, phenomenal proportions.

During pandemic response basic three strategies were identified as different models of community engagement. 1. Recipients Model in which communities played as role of passive receiver. They receive food, healthcare, and other essential services from donors. 2. In Partner's Model community members actively participate with donors in prioritizing needs, developing solutions, and implementation and Ownership Model communities identify their own needs, design and implement solutions largely independently, and seek external support only to cover gaps in local resources. Twenty million masks, 10,000 liters of sanitizer and hand wash have been produced by some 20,000 SHGs across 27 Indian States. Since production is decentralized, these items have reached widely-dispersed populations without any logistics hindrances and transportation. Almost 90 per cent of the districts of the country SHG women has played an important role in producing facemasks, running community kitchens, delivering essential food supplies, sensitizing people about health and hygiene and combating misinformation¹⁷.

With community volunteers and leaders in notified slum Dharavi, Mubai Municipal corporation and SNEHA assist residents in supply of essential public services and supported in health screenings, contact tracing, and sharing COVID-19 prevention measures in communities. SNEHA, YUVA, and the SPARC supported community collectives emerged as strong change-makers during the pandemic. Communities wish to retain or regain their autonomy, dignity, and self-reliance for survival and development. Communities wish to retain or regain their autonomy, dignity, and self-reliance for survival and development. the 'owners' and 'partners' models of community engagement emerged in slums with strong peer-to-peer bonds, community cohesiveness, and social ties to help each others¹⁸.

Disaster management action plan developed by local bodies in Kerala was found good resource to respond to COVID-19. Kudumbashree (WEP) In Kerala, stepped in with massive production of personal care products-Mask sanitizer and Hand rub which faced a spike in demand from health workers and the general public. Kutumbshree also manage 1200-odd community kitchens across Kerala within three days of the government issuing direction. 1.9 lakh Whatsapp groups with 22.5 lakh members communicated and broadcast precautionary messages on covid appropriate behaviors. Similar efforts have been made in Odisha and Jharkhand states as well.

Conclusion

The motivation for increasing the involvement of communities and civil society differs quite widely depending on the group of stakeholders. Civil society and CBOs often employ rights based approach. There are some essential requirements to involve communities or civil society on a sustained and effective basis. The requirements can be summarized as:

- A healthy community is a form of living democracy: people working together to address what matters to them. Without using community action plan tool which is one of the participatory tools used to build the capacity of community members in taking action in accordance with the problems, needs, and potential of the community, community action goals for health outcomes cannot be achieved.
- Without addressing the existing legal framework that defines rights of the people unambiguously community engagement cannot be achieved. The law needs to define a number of aspects like timeliness of implementation, feedback, institutionalization and redressal mechanisms.

- One of the crucial aspects of the legal and the policy framework is the involvement of the private sector. Another critical aspect is the regulation of the private sector. These and many other issues need to be well defined in the statutes for full enjoyment of their benefits.
- The second key aspect is of creating spaces and mechanisms for people/civil society to participate, like the formation of village level committees, institution level committees and a number of spaces where people and civil society can engage with the government, and mechanisms for this need to be evolved.
- Most important of all is the development of the 'spirit' of participation in society: This involves not only the people, but also sensitization to, and orientation about people's participation for public health staff and officers. There is also clear need to include this and related issues into the medical curriculum.

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Impact of Traditional Maternal and Child Healthcare Beliefs and Practices on Maternal and Child Mortality in the Tribal Population of India

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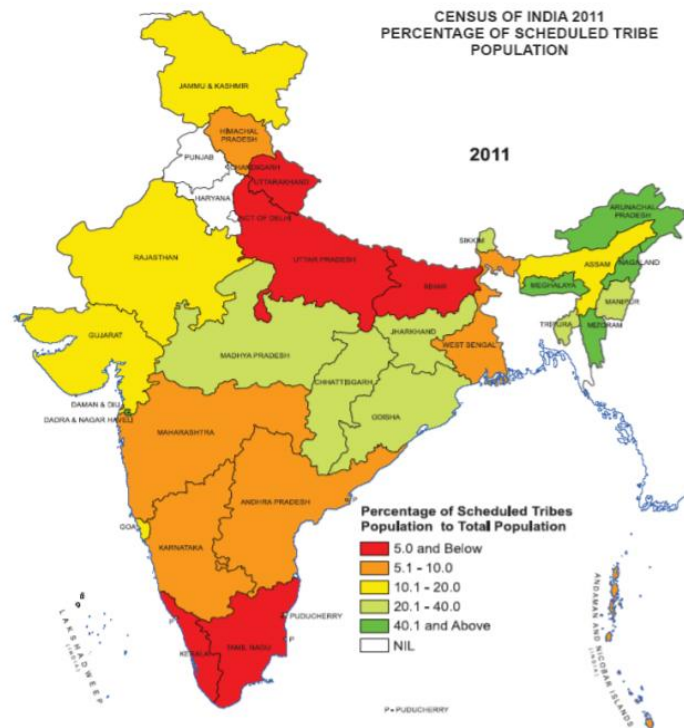
Abstract

It is a well-known fact that tribal people's health and illnesses are influenced by their cultural contexts. Regardless of their region or religion, tribals across India follow their own traditional practices related to their health and illnesses. The pace of tribal development can be accentuated by taking into consideration their health care beliefs and practices. The purpose of this paper is to explore the health and health-care beliefs of tribes pertaining to maternal and childcare in India. To examine and identify the factors influencing maternal and child mortality among the tribals as well as to explore the pattern of their health care practices and beliefs, a review of the literature was conducted. Google Scholar, PubMed, ScienceDirect and ResearchGate were used to search literatures published concerning the current study, and the studies conducted and published between 2000 and 2020 were analysed. Specific keywords were used to search the published studies. The findings of the analysis reveal that indigenous beliefs and practices have a major impact on the health status of tribal women and children and may positively or negatively affect the well-being of mother and child.

Keywords: Tribal health, Indigenous beliefs and practices, Maternal and child mortality, MCH, TBA.

Introduction

Scheduled Tribes are those communities that are scheduled in accordance with Article 342 of the Indian Constitution. These tribes have been notified in 30 states/UTs, with 705 unique groups being notified as Scheduled Tribes¹. According to the 2011 census, the country's tribal population is 10.43 crore, accounting for 8.6 per cent of the overall population. The STs are found throughout the country, with majority residing in Central India, followed by North-Eastern India¹. Tribal groups dwell in isolation and they have their own beliefs about lifestyles and health behaviours, as well as their own traditions and practices¹. There has always been a link between health and disease-related common beliefs, traditions, values, and practices².



Source: Presentation "SCHEDULED TRIBES IN INDIA, Census 2011" by Registrar General of India, May 2013⁽³⁾

The maternal and child health status of tribal populations is directly linked to their healthcare beliefs and practices. Tribal women are malnourished, and their dietary energy intake is insufficient to compensate for their strenuous physical demands⁴. According to NFHS-4, anaemia affects nearly 60 per cent of tribal women between the ages of 15 and 49. Approximately 20 per cent did not receive any antenatal care during their pregnancy⁶. Though, no recent estimates for maternal mortality among tribal women are known⁶. According to NFHS-4 (2015-16) reports, the tribal population's infant mortality rate (IMR) is 44.4 per 1000 live births, the child mortality rate (CMR) (0-4years age group) is 13.4 per 1000 live births, and the under-5 mortality rate (U5MR) is 57.2 per 1000 live births. These are significantly higher than the statistics reported by NFHS-4 for the entire country⁵.

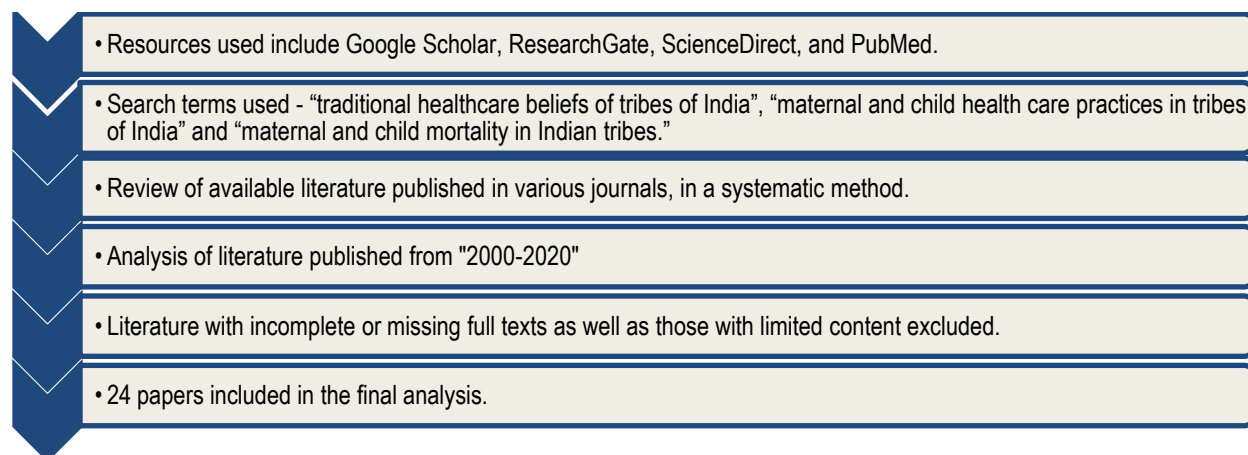
Women in tribal societies are often referred to be the "most underprivileged among the underprivileged"⁷. As a result of cultural beliefs and traditions surrounding sexual health and childbearing, issues related to maternal and child health are of great concern among the tribal community⁸. The lack of age gap between children adversely affects the health condition of the mother and children. They are commonly faced with inadequate nutritional foods, lack of necessary vaccination and affliction from fatal diseases⁹. Tribal women with poor nutrition and health are more likely to have low-birth-weight babies. It is notable that, despite the fact that tribal women in India face high levels of morbidity and mortality, they do not generally seek medical assistance from facilities such as health centres⁴.

The present paper is a review of available literature on traditional maternal and child health care beliefs and practices among Indian tribes. The study highlights regional variations in maternal and child healthcare beliefs followed by tribes residing in different parts of India. The paper has also attempted to explore their implications on maternal and child mortality. Few recommendations have also been included.

Methodology

The available literature was reviewed using a systematic method. A wide range of scholarly resources, including Google Scholar, ResearchGate, ScienceDirect, and PubMed, were employed, in accordance with the study objectives. The search terms used were “traditional healthcare beliefs of tribes of India”, “maternal and child health care practices in tribes of India” and “maternal and child mortality in Indian tribes.” The search turned up a large number of papers that had been published in a variety of scientific journals, books, and other scholarly publications. However, the study was limited to only those papers published during “2000-2020”. The analysis excluded papers with incomplete or missing full texts, duplicated articles as well as those with limited content. After thorough selection of the required material, a total of 24 papers were involved in the final analysis.

The present study has taken account of the traditional healthcare beliefs and practices of tribal population of different regions throughout India and involved the Particularly Vulnerable Tribal Groups (PVTGs) as well as other tribes. For exploring maternal health status, women from the reproductive age group (15-49years) have been considered.



Regional Variations of Maternal and Child Healthcare Beliefs and Practices among Tribes in India

India's tribal population is dispersed across the country, displaying a diverse culture and socioeconomic status. The common beliefs, customs and practices connected with health and disease have been found to be different among different tribes. Wide variety of cultural practices and beliefs are prevalent in northern India such as delivery in cowshed/floor covered with cow dung, with the help of dais or traditional birth attendants (TBAs), refraining from eating certain foods during pregnancy and discarding the colostrum¹⁰. Gaddi women simply avail the help of elderly experienced women during delivery¹¹.

In north-east India tribes of Assam such as Karbis believe that complicated situations during pregnancy occur due to the curse of an evil spirit and Dibongya deori women have a belief that if a new born child is directly breast fed after birth, then he will face stomach discomfort^{12,13}. Tribal women of Nagaland do not use contraception on grounds of their partners having physical relationship with other women¹⁴. Women in tribes of Odisha believe that contraceptives (pills and condoms) may lead to deformed child and premature death, and they do not feed colostrum, instead give pre-lacteal feed such as ghee, honey, cow's milk¹⁵⁻¹⁶. A similar practice of discarding the colostrum and feeding pre-lacteals is seen in tribes of West Bengal also¹⁷.

No special care or diet is taken by tribal women of central India during their pregnancies. A few tribes clean the place of delivery and paste it with cow dung. Squatting position is considered best for easing the process of delivery¹⁸. Colostrum is not discarded. Pre-lacteals like honey, goat milk, warm water, etc., are common¹⁸. The tribes of Jharkhand prefer giving goat milk to the infant after delivery¹⁹. Tribes in western India believe that there is no need to visit health facilities without any problem/complication²⁰. In tribes of Gujarat, the infant is breastfed only after 3rd day²⁰. Similarly, in tribes of Maharashtra, breastfeeding is initiated after 3 days. Pre-lacteal feeding like honey, jaggery, sugar water is given²¹.

In tribes of southern India, delivery takes place in a separate room covered with cow dung, with the help of a dai²². Any complication during delivery is dealt at home and the umbilical cord is cut after the delivery of the placenta²³. Some tribes of Karnataka do not feed colostrum as they consider it unhygienic for the baby²⁴⁻²⁵.

Traditional Practices Related to Maternal and Child Healthcare in Different Regions of India

Region	Tribes	Traditional Maternal Care Practices	Traditional Childcare Practices
Northern region	Tribal population of Garhwal region (Uttarakhand) Gaddis (Himachal Pradesh)	Avoid green vegetables, yam, pulses, red grams, papayas, and mangoes during pregnancy. ¹⁰ Deliver in cowshed or at home. ¹⁰⁻¹¹ Deliver the baby in the sitting position. ⁽¹⁰⁾ Cow urine sprinkled on the back of mother as a purification ritual. ¹⁰	Umbilical cord cut with a knife. ¹⁰ Cord blood rubbed on the lips of baby (makes baby's lips red). ¹⁰ Oil, ghee, turmeric and mother's milk applied in the umbilical area. ⁽¹⁰⁾ Given honey after birth, breastfeeding after 3 days. ¹⁰
North-eastern region	Karbi (Assam) Mishing/Miri (Assam) Dibongya Deoris (Assam) Thadou (Manipur) Khamti (AP) Apatani (AP) Lotha Naga tribe (Nagaland)	No special care, no additions to diet during pregnancy. ¹³ Reduction in food intake during pregnancy, believe it reduces the size of the foetus, leading to a safe delivery. ¹² Delivery by elderly ladies. ⁽¹²⁾ Kneel down position during delivery. ¹² Apply honey to nipples just after delivery before lactating. ¹²	Umbilical cord cut by a sharp bamboo strip. ¹²⁻¹³ Few drops of honey given after birth. ¹² Colostrum is given in most tribes, except Dibongya Deoris of Assam. ¹²⁻¹³ Solid food given to male child after six months and girl child after nine months. ¹² Immunization is not considered important. ¹²
Eastern region	Gond tribe (Odisha) Kandha Tribe (Odisha) Tribes of Motipur village (West Bengal)	No family planning, believe contraceptives lead to deformed child. ¹⁵ Preference of home delivery. ¹⁶ Immediately isolating the mother and the new born, because of the 'impurity and polluting effects of childbirth'. ¹⁷ Foods having laxative properties, causeskin rash, and acidic and cold food avoided after delivery. ¹⁷	Cord cutting by a new blade. ¹⁶ Application of mustard oil and turmeric powder on umbilical area. ¹⁶ Early bathing of child in cold water within 6 hours of birth. ¹⁶ Making loud noise with plate and blowing air into ear, if infant faces breathing problems. ¹⁶ Use of pre-lacteal feed before breastfeeding (ghee, honey, red tea and cow's milk). ¹⁶⁻¹⁷ Colostrum discarded. ¹⁶⁻¹⁷ Prolonged breastfeeding up to four to five years. ¹⁷
Central region	Gond tribe (MP) Khairwar (MP) Bhil (MP) Bharía (PVTGs) (MP) Birhor (PVTGs) (MP) Baiga (PVTGs) (MP) Kol (MP) Muria gond (Chhattisgarh) Dhurwa (Chhattisgarh) Hill korwa (PVTGs) (Chhattisgarh) Pando (Chhattisgarh) Kamar (PVTGs)	Women do not accept contraceptives, rely on herbal medicines. ¹⁹ No special care, no additions to diet during pregnancy. ¹⁸⁻¹⁹ Any complication during pregnancy, people resort to praying. ¹⁹ Delivery done by dais or elderly ladies. ¹⁸⁻¹⁹ Delivery area smeared with cow dung paste. ¹⁸ Squatting position considered best for smooth delivery. ¹⁸ Restrict the use of cold and sour foods	Umbilical cord is cut with a blade or sickle, by placing on one rupee coin. ¹⁹ Infant given a bath with warm water and soap on the same day of delivery. ¹⁸⁻¹⁹ Pre-lacteals like honey, goat milk, warm water, etc., are common. ¹⁸⁻¹⁹ Colostrum is discarded, breastfed on the 3 rd day in most tribes in Madhya Pradesh and Jharkhand. ¹⁸⁻¹⁹ Tribes in Chhattisgarh feed colostrum to infant on the first day. ¹⁸

	(Chhattisgarh) Munda (Jharkhand) Santhal (Jharkhand) Oraon (Jharkhand) Mal paharia (PVTGs) (Jharkhand) Ho (Jharkhand)	for mother after delivery. ¹⁸ Fasting/Less food given to mothers after delivery. ¹⁸⁻¹⁹	
Western region	Bhil tribe (Gujarat) Tribal communities in Maharashtra	Common belief that Iron and Folic Acid(IFA) tablets increase the weight of the foetus, making delivery difficult. ¹⁹ Papaya, brinjal, jaggery, ANM touch avoided during pregnancy, believe they induce abortion. ²⁰⁻²¹ Deliveries occur at home, with the help of TBAs, usually in Muslim families. ²⁰⁻²¹ Mother eats less food following delivery. ²⁰⁻²¹	Umbilical cord is cut with used new blades in some tribes, household knives in others. ²⁰⁻²¹ Child is not draped until the seventh day of his life. ²⁰ Non-bathing of the newborn until 7 days ²⁰ Antiseptic powder is applied on the umbilical cord stump. ²¹ Infant is not breastfed on first three days. ²⁰⁻²¹ Colostrum is discarded. Pre-lacteal feeding like honey, jaggery, sugar water, cow milk is given. ²⁰⁻²¹
Southern region	Banjaras (Andhra Pradesh) Gadaba and Konda Dora tribes (PVTGs) (Andhra Pradesh) Hakkipikkis (Karnataka) Lambani (Karnataka)	Meat, fruits and vegetables should be consumed during pregnancy. ²⁶ Prefer home deliveries, conducted by dais/elderly women. ^{22,23,25} Delivery in a separate room with cow dung spread on the floor or in cowshed. ^{22,25} Cord is not traditionally cut until after the placenta is delivered. ^{23,25}	Umbilical cord is cut by sickle or blade. ^{22,23,25} Sesame oil, coconut oil or castor oil applied over the cut end of the cord. ²³ Pre-lacteal feed- Sugar water, milk mixed with Jaggery, honey is given. ²³⁻²⁴ Colostrum is discarded. ²³⁻²⁴ Breastfeeding is started on the third day. ²³

Discussion

The health care practices among tribes are an indispensable part of their culture. The problems of tribal women in India stem from culturally entrenched community traditions, customs, culture, beliefs, and taboos. The present paper has elaborated the insights provided by various set of research studies on the issue of tribal maternal and child health care beliefs and practices. Maternal mortality is high among various tribal groups. The primary causes are unsanitary and primitive parturition practices such as delivering in a squatting position or delivering in a cowshed/room smeared with cow dung, and cord cutting with old rusted instruments⁽⁸⁾. It has been witnessed that majority of women stick to home deliveries aided by an elderly lady or Dais from the household or neighbourhood⁸. In addition, tribal women's vitamin, iron, and calcium intake has been found to be low, and they are not vaccinated against tetanus, and the majority of them drink alcohol even while pregnant⁸.

Recent data for Maternal Mortality Ratio (MMR) of individual tribal regions is not known. The tribal heart of India comprising of Madhya Pradesh displays a high MMR. Similarly, Chhattisgarh also reports poor condition of maternal health²⁷.The tribal women of central India take no special care and consume no special diet during pregnancy, as well as do not utilise antenatal care services¹⁸. Delivering in a dark isolated corner of the house, usually smeared with cow dung is a common practice¹⁸, might act as source of infection for both mother and the baby.Similarly, Assam has a very high MMR of 215 and the tribal population constitutes around four per cent of the total ST population²⁸. No special care and no additions to diet during pregnancy are made¹³.

The MMR of Northern, Western and Southern states is relatively better than the Central states²⁷. Tribals of Andhra Pradesh consume certain foods during pregnancy such as meat, fruits and vegetables rich in

nutrients and are necessary for the health of mother and baby²⁶. Half of the home deliveries were assisted by trained birth attendants²⁰. Fasting/eating less food after delivery is a common practice, resulting in low body mass index of the mother, and affects milk production, leading to undernourished infant²⁰. This finding has also been suggested by tribes in other studies^{18,19,21}. The tribal women of Maharashtra do not accept Iron and Folic Acid tablets due to the belief that they might lead to increase in the size of the foetus, making the delivery difficult⁽²¹⁾. This is a major contributor to anaemia among women, and low birth weight and lowered resistance to infection among children, that might lead to increase in mortality²⁹.

Infant and under-5 mortality rates among the tribal population of Odisha, Madhya Pradesh, Chhattisgarh and Arunachal Pradesh are quite high, much more than those reported for the whole country^{1,28}. Preference of home deliveries with the help of elderly ladies, without any supervision of trained/qualified staff^{12,16,18} is one of the prominent factors for maternal and infant mortality. In case of complications during delivery, tribal people prefer offering prayers to their deities, rather than visiting a health facility¹⁸. Cutting the cord with unsterilized blades, bamboo strips^{12,16} often cause umbilical cord infections, and might lead to neonatal deaths. The unsterilized cord care has been reported in the tribal population in multiple studies^{10,13,19-23,25}. Common beliefs of feeding honey as a pre-lacteal, immediately after birth, instead of breastmilk and colostrum avoidance are prevalent among the tribal people^{12,16,18}. The practice of giving pre-lacteal feed is reported in many tribes in previous researches^{10,17,19-21,23,24}. For infants, not being breastfed after birth is associated with an increased incidence of morbidities like diarrhoea, pneumonia, Acute Respiratory Infections (ARI), and infant mortality³⁰, as early breastfeeding plays a central role in development and maturation of the infant immune system. Inappropriate feeding practices that occur in the first year of life directly or indirectly lead to malnutrition deaths³⁰. Practices like making loud noise with plate and blowing air into ear, if infant faces breathing problems, instead of contacting the health facilities¹⁶, may also be associated with infant mortality.

The tribes of Northern, Southern and Western India reported lower values of IMR and U5MR, as compared to the rest of the tribal regions^{1,28}. A shift in childbirth practices has been witnessed in Gujarat's tribal population, from home births by Traditional Birth Attendants (TBAs) to hospital births³¹. Mostly, an antiseptic powder is applied on the umbilical cord stump in Gujarat, reducing the chances of infection²⁰. Usage of new bed sheet, new blade for cutting the cord, washing hands with soap, and using a private room for delivery are now increasingly being reported by TBAs among the tribals in Maharashtra²¹. Traditional practices and beliefs followed by tribes of these regions may be helpful in preventing mortality among children, though more research is required in this area.

Although maternal and neonatal tetanus have been eliminated from India in 2015, the risk for developing this deadly disease might be increased due to improper hand washing techniques, unclean delivery practices (use of rusted instruments, delivery in cowshed), traditional birth customs such as application of cow dung over umbilical stump and low interest towards immunization, which can be seen among underprivileged tribal people³².

Traditional healthcare beliefs and practices are embedded deeply among the tribes. These socio-cultural practices, when combined with a lack of adequate health infrastructure and services, exacerbate issues related to maternal and child health, resulting in high morbidity and mortality rates⁸. However, some of these practices do have a positive impact. More research into this area will surely highlight the positive as well as negative impact of traditional beliefs on maternal and child mortality.

Conclusion

In tribal people, health is predominantly associated with the socio-cultural practices owing to lack of adequate health care services. Their health conditions deteriorate with poor nutrition and quality of living, dietary patterns, housing and education. Furthermore, inequalities in provision of health services as well as traditional healthcare beliefs vary among different tribes. This study examined the disadvantaged condition of the tribal women and children in different regions of India, in terms of maternal and child mortality. It can be concluded that the tribal people's traditional beliefs have an impact on the already fragile health of mother and child in both positive and negative ways. The government's recognition of tribal health practises is critical for the formulation of targeted health policies as well as tribal people's health seeking behaviour.

The indigenous beliefs of the people have a significant impact on the Indian health system in rural and tribal areas. Acceptance of modern health facilities remains low, resulting in a higher number of morbidities and deaths among vulnerable groups, particularly women and children. Incorporating the ethnomedicinal system into modern healthcare would not only increase acceptance, but would also promote the positive effects of traditional medicines and practices.

Recommendations

The beliefs and practices are integral part of tribal culture; therefore, culturally sensitive interventions should be planned to improve maternal and child health outcomes among tribal populations. Integration of traditional medicines into primary health care and strengthening of health workforce is required. More efforts should be put on conducting research on the healthcare culture and beliefs of Indian tribes. A more comprehensive and efficacious policy focussing on health status of the tribals should be formulated.

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